

MINUTES OF THE 118TH MEETING OF STATE LEVEL EXPERT APPRAISAL COMMITTEE (SEAC), JHARKHAND HELD ON 22ND, 23RD, 24TH, 25TH AND 26TH OCTOBER, 2024.

The 118th meeting of State Level Expert Appraisal Committee (SEAC), Jharkhand was held on 22nd, 23rd, 24th, 25th and 26th October, 2024 under the Chairmanship of Shri Ashok Kumar Singh, IFS (Retd.) in the Conference Room at SEAC, Ranchi.

The following members were present:

1. Shri Ashok Kumar Singh, IFS (Retd.)	- Chairman
2. Shri Niranjan Lal Agarwalla	- Member
3. Dr. Raju Kumar	- Member
4. Shri Ashok Kumar Dubey, IFS (Retd.)	- Member
5. Dr. Ajay Govind Bhatt	- Member
6. Shri Srikant Verma, IFS	- Member Secretary

SEIAA forwarded various projects to the SEAC for the technical appraisal after the last SEAC meeting held on 27th, 28th, 29th, 30th September, 2024 and 01st October, 2024. These projects have been put up for discussions. Besides, these Projects, wherein PP's were asked to provide requisite information / clarifications in the earlier meeting of SEAC, were also considered for appraisal. The Project Proponents have been asked to make technical presentation for the appraisal of their projects before the committee.

The following observations / recommendations were made during the presentation (Project - wise), as under:-

Day 1 : October 22nd, 2024 [Tuesday]

Consideration of proposals

1. Expansion of Residential Complex "Diamond City" of M/s Eastern Estate Construction & Developers Pvt. Ltd., Village : Oyana, Thana no. : 46, Thana : Pithoria, Distt. : Ranchi, Jharkhand (Proposal no.: SIA/JH/INFRA2/494350/2024)

Name of the consultant : M/s Oceao-Enviro Management Solutions (India) Pvt. Ltd, Ghaziabad

This is an expansion project which has been taken for appraisal on 22.10.2024.

As per decision taken in 117th meeting of SEAC held from 27.09.2024 to 01.10.2024 site visit was carried out by the Committee for the understanding of the actual status of the project.

Project is classified as Category B(a) as per EIA Notification as the built up area is less than 1,50,000 m² and development area is less than 50 ha.

The proposed project is construction of Expansion Of Residential Complex "Diamond City" of M/s Eastern Estate Construction and Developers Pvt. Ltd., Village: Oyana, District: Ranchi, Jharkhand. The total plot area of the project is 38,627.32m² or 2.089 acres. The Built-up area for project is 148927.02 m².



Background:

- The proposed project is construction of Expansion of Residential Complex "Diamond City" by M/s Eastern Estate Construction and Developers Pvt. Ltd. Located Village: Village: Oyana, District: Ranchi, Jharkhand. The total plot area of the project is 38,627.32m² or 2.089 acres. The Built-up area for project is 148927.02 m2. (including FAR + NON FAR + Services)
- The proposed project is consists of Building blocks for which application has been submitted for Environment Clearance.

Salient features of the project:

S.No.	Particulars	Existing Area As Per EC Letter	Expansion	Total (Existing + Expansion)
1	Total Plot Area	34,762.63	3,864.69	38,627.32
2	Road Widening Area + Excess land	3,907.06	0	187.31
3	Plot area after leaving Road Widening & Common Road Area & Excess Land	30,855.57	0	38,440.01
4	Net Plot Area (9.50 Acres)	30855.57	7,584.44	38440.01
5	Ground Coverage Area (35%)	10383.855	3,100.54	13,484.39
6	Proposed FAR Area (3.41)	87137.745	40,550.60	127688.34
7	Non FAR including Services	11977.45	9,261.23	21238.68
8	Built up Area	99115.195	49,811.83	148927.02
9	Green Area (26% of net plot area) • Green Belt (15.5 %) • Open Green area (10.5 %)	7714.8	2,485.20	10200.00 5987 4213

Khata no. & Plot no. of project:

Khata No,	Existing Plot	Expansion Plot
01, 67, 160, 154, 76, 150, 163, 16	308(P), 310(P), 311(P), 312(P), 313(P), 314(P), 315(P), 317(P), 318(P), 319(P), 324(P), 325(P), 326(P), 327(P), 328(P), 329(P), 330(P), 331(P), 332(P), 374(P), 387(P)	302, 303, 304, 305, 307, 308, 309, 326, 329, 371, 373.

COMPARITIVE AREA STATEMENT - DETAILED FAR & NON FAR

Old Existing Building						Building after Revision and Expansion 04122024					
S. No.	Blocks	Floors	Area			S. No.	Blocks	Floors	Area		
			Total FAR	Total Non-FAR Area	Total Built up Area				Total FAR	Total Non-FAR Area	Total Built up Area

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			Area (m ²)	(m ²)	(m ²)				Area (m ²)	(m ²)	(m ²)
1	A1	G+9	5188.050	774.590	5962.740	1	A1	G+9	5188.500	774.590	5962.740
2	A2	G+9	5297.380	764.460	6061.840	2	A2	G+9	5297.380	764.460	6061.840
3	A3	G+9	5297.380	764.460	6061.840	3	B1	B+G+9	8113.570	1069.520	9183.090
4	B1	B+G+9	8113.570	1069.520	9183.090	4	B2	B+G+9	8113.570	1069.520	9183.090
5	B2	B+G+9	8113.570	1069.520	9183.090	5	B3	G+9	7229.405	1028.470	8257.875
6	B3	G+9	7229.405	1028.470	8257.875	6	B4	G+9	7229.405	1028.470	8257.875
7	B4	G+9	7229.405	1028.470	8257.875	7	B5	G+9	7229.405	1028.470	8257.875
8	B5	G+9	7229.405	1028.470	8257.875	8	B6	G+9	7310.480	1033.580	8344.060
9	B6	G+9	7310.480	1033.580	8344.060	9	B7	G+9	7310.480	1033.580	8344.060
10	B7	G+9	7310.480	1033.580	8344.060	10	C1	G+9	4787.550	662.830	5450.380
11	C1	G+9	4787.550	662.830	5450.380	11	D	B+G+16	21235.100	4918.360	27153.460
12	D1	G+9	2323.690	205.850	2529.540	12	E	B+G+16	18030.340	4125.340	22155.680
13	D2	G+9	2323.690	205.850	2529.540	13	LIG & EWS	G+16	12416.220	1151.280	13567.500
14	E1	G+9	2160.520	226.280	2386.800	14	DUPLEX (17NOS)	G+1	2609.67	0.000	2609.67
15	E2	G+9	2160.520	226.280	2386.800	15	Swimming Pool	G+1	144.360	524.200	668.560
16	E3	G+9	2160.520	226.280	2386.800	16	Community hall	G	335.000	0.000	335.000
17	Commercial	G+4	2902.030	628.960	3530.990	17	Commercial	G+6	4186.240	948.020	5134.260
			87137.645	11977.450	99115.195				127766.675	21160.690	148927.015

- Block A3 HAS BEEN MODIFIED TO PROPOSED 2 BLOCKS- BLOCK D & E TO G+16
- D1,D2,E1,E2&E3 HAS BEEN CLUBBED TO SINGLE EWS LIG BLOCK
- NEW DEVELOPMENT IS CLUB,SWIMMING AND DUPLEX
- COMMERCIAL IS UNDERGOING FLOOR EXPANSION

Population Break up:

S. No.	Particulars	No. of Flats	PPU/No. of person/m2	Total Population (Existing + Expansion)
	Residents			
1	3 BHK	750	at 6 Person Per Unit	4500
2	2 BHK	90	at 5 Person Per Unit	450
3	EWS & LIG	256	at 4 Person Per Unit	1024

4	Duplex	17	at 6 Person Per Unit	102
Total Residential Population				6076
5	Staff	-	at 10 % of Residential	608
6	Visitors	-	at 10% of Residential	608
Total Population (Residents + Staff + Visitors)				7292

Site Surroundings:

SR. No	Particulates	Name of Places	Distance (Km)	Direction
1.	Nearest Airport	Birsa Munda Airport, Ranchi	17.9 Kms	SSW
2.	Nearest Railway Station	Tatisilwai - Train station,Purulia Rd	10.216 km	SSE
		Namkon - Train station TetraTolly Basti, Namkum,Ranchi, Jharkhand	12.397Km	SSW
		Ranchi Junction	14.337 Km	S
3.	Nearest Bus Stand	Khadgarha Bus Stand	12.705 Km	SSW
		Ranchi Kanta Toll Bus Stand	12.44 Km	SSW
4.	Nearest State Highway/Any other road	SH-2	2.006 Km	W
5.	Nearest National Highway	NH33	3.03 Km	E
6.	Nearest School/College	Govt Primary school , Nueri	1.02 Km	NE
		Kalpana Chawla High School	2.46 Km	NNW
		Ranchi college of Technology and research centre	3.78 Km	SE
7.	Nearest Temple	Radha Krishna Mandir	10.07 Km	ESE
		Shiv Mandir	1.554 Km	WNW
		Hanuman Mandir	6.46 Km	NE
8.	Nearest Hospital	Medanta Hospital, Ranchi	2.88 Km	SW
		Raj Superspeciality Hospital	14.49 Km	NE
9.	Nearest Police Station	Tatisilwai Police Station	10.129 Km	SSE
		Lalpur Police Station	12.42 Km	SSW
		Omanjhi Police station	7.2 Km	ENE
10.	Nearest Fire Station	Army fire station	8.68 Km	NNE

11.	Commissioner Office	commissioner office, Ranchi	12.524Km	WSW
12.	Gram Panchayat	Bargain Panchayat Bhavan	7.217 Km	SE
13.	Nearest Pond	Titartoli Pond	9.8 Km	NE
14.	Nearest River/Nallah/ Canal	Getalsud Dam	14.75 Km	E
15.	Wild Life Sanctuary	Dalma Wildlife Sanctuary	>15 Km	ESE
16.	Zoological Park	Tata Steel Zoological Park	>15Km	WNW
17.	Nearest Defense Installation	CAP Ground	6.016 Km	SE

Water Requirement:

The water requirement will be met by Ground water until municipal connections are available. The total water requirement for operational phase is approx. 881 KLD. Fresh water requirement is approx. 577KLD.

S. No.	Particulars	Occupancy/ Area/ No's	Fresh Water Demand		Treated Water Demand		Total(KLD)
			lpcd	Quantity (KLD)	lpcd	Quantity (KLD)	
1	Residents	6076	90	547	45	273.42	820
2	Staff	608	25	15	20	12.16	27
3	Visitors	608	5	3	10	6.08	9
4	Horticulture	12685.2 0	NIL	NIL	1l/ sq m	13	13
5	Makeup water from Swimming Pool (10% of Swimming Pool Water Volume)			12			12.0 0
Total water Requirement (Fresh + Treated water)				577		304	881

Calculations for Daily Water Demand:

Summary of Water and Waste water:

S.No.	Particulars	Existing (KLD)	Expansion (KLD)	Total (KLD) (Existing + Expansion)
1	Total Water Requirement (Fresh water)	591	290	881

	+ Treated Water)			
2	Fresh Water Requirement	384	193	577
3	Treated Water Demand or Water Requirement met by Treated Water	207	97	304
4	Flushing Water Demand met by Treated water	196	96	292
5	Wastewater Generated { 80% of Fresh + 100% flushing)	504	250	753
6	STP Capacity [Approx 20% higher than the wastewater generated] developed module wise	550	250	800
7	Treated water Reused in Horticulture	10.2	2.8	13

Power Requirement:

There is requirement of 3236 kVA power supply. 17 DG sets of capacity of 50 kVA are proposed to be used, as backup power supply. The DG sets will be equipped with acoustic enclosure to minimize noise generation and adequate stack height for proper dispersion.

Calculation of Solid Waste generation:

S. No.	Total (Existing + Expansion)		
	Category	Kg per capita per day	Waste generated (kg/day)
1	Residents	6076 @ 0.5 kg/day	3038
2	Staff	608 @ 0.25 kg / day	152
3	Visitor	608 @ 0.15 kg/day	91
4	Landscape waste (10200m ²)	3.13 @ 0.5 Kg/ acre	2
	Total		3283

STATUTORY CLEARANCES:

1	DFO Forest Distance	:	DFO, Ranchi Forest Division vide letter no.2464, dated 31.07.2018 and letter no. 1620, dated 08.05.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
2	DFO Wild Life	:	DFO, Wildlife Division, Ranchi vide memo no. 1356, dated 10.12.2019 and letter no. 42, dated 11.01.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palkot

		Wildlife Sanctuary.
3	CO certificate	The CO, Kanke, Ranchi vide letter no. 588 (ii), dated 26.07.2021 has mentioned the plot no. of the project is not recorded as "Jangle Jharl" in R.S. Khatiyan & Register II. For the expansion plot no. 302, 303, 304, 305, 307, 308, 309, 326, 329, 371, 373, certified Khatiyan by Administrative Officer of Ranchi Collectorate has been submitted which reflects that the above plots are not recorded as Jungle-Jharl land.
4	AAI NOC	Airport Authority of India has issued NOC vide letter no. RANC/EAST /B/ 062021/ 552243 dated 29.06.2021.
5	Fire Department	A fire advisory has been issued by Fire Department, Jharkhad, Ranchi vide vide letter no. 440, dated 20.10.2017.
6	CGWA	No Objection Certificate (NOC) for Ground Water Abstraction vide NOC No. CGWA/NOC/INF/ORIG/2022/14989 dated 30.03.2022 valid upto 29.03.2027.
7	Building Plan	Building Plan approved by RRDA vide letter no. 549, dated 28.02.2018.
8	Previous Environmental Clearance	Previous violation Environmental Clearance granted by SEIAA, Jharkhand vide letter no. EC/SEIAA/2021-22/2574/2021/410, dated 01.02.2023.

CURRENT STATUS & TIME BOUND ACTION OF REMEDIATION PLAN

S.No	Environmental Aspects	Cost Analysis	Provisions	Progress and amount has been spent till date	Amount implemented till date	Time Line to complete remaining Task
			(in Lakhs)		(in lakhs)	In days
1	Air Environment	Enhanced Green Belt To Be Developed With Plantation With Link Road To Highway In Number Of Trees In The Row Of The Roads In Consultation With Competent Authority/ Gram Panchayat Total Length = 1.8 Km @ Effective Length One Side Of The Road Area =	8	We have started this work in this monsoon season and the work is in progress.	2	350 days

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		3600 Sq.M = 1.5 * 1.5 M = 2500 Trees Approx. Cost Of Per Tree (with tree guard) = 240 /-				
2	Water Environment	Creation of Artificial Recharge Structures in Public Areas (2 No.)	4	We are exploring the site to provide these systems.	NIL	180 days
3	Energy Conservation	Solar Based Street Lights/Appliances In The Village roads / Community Areas/ Panchayat Bhavan Of Village Oyna (Within Stretch Of 2 Km Length On Around The Project Site)	8.9	We are going to provide solar street light under this segment. We are in selection stage to provide the same.	NIL	240 days
4	Natural Resource Conservation	Eco-Tourism Project Through DFO Ranchi	19	Rupees 13 Lakhs has been Paid to DFO Ranchi vide dd no 904198232 Dt 23/12/22 and cheque No. 808298 dated 13/03/2023 (ledger copy attached)	13	30 days
5	Community Resource Augmentation	Construction Of Public Community Hall In The Owned Land	78	It is in planning stage.	NIL	400 days

		Construction & Maintenance of Private road from the project site to the nearby project towards ring road for public benefit	5	It is in planning stage.	NIL	400 days
		Development of temple on public land	5	Almost complete (Photographs and Bills attached)	5	0 days
			127.9		20	

ENERGY CONSERVATION MEASURES

S.No.	Energy conservation measures	Quantum of savings
1.	LED lighting Inside FAR & NON FAR - 870 kVA	20 %
2.	Solar power generation – • Through Solar panel – 80.9 kVA • Solar Lights – kVA (20 Watt . No X 50 Lights)	5.5 %
3.	Other energy efficient equipment (transformers, energy efficient motors & piping system, etc.) 64.72 kVA	2 %
	Total Conservation estimated	27.5 % Approx

Based on the presentation made and information provided, the Committee decided that the proposal for Expansion of Residential Complex "Diamond City" of M/s Eastern Estate Construction & Developers Pvt. Ltd., Village : Oyana, Thana no. : 46, Thana : Pithoria, Distt. : Ranchi, Jharkhand is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure –I alongwith the following specific conditions :

- I. The approach road from the project to the ring road must be of sufficient width of black top (minimum two lane) to handle the traffic load increment due to the project.
- II. The Natural Resource & Community Resource Augmentation Plan must be successfully completed within 03 years from the date of previous EC i.e. 01.02.2023.
- III. As per Affidavit dated 18.09.2024 submitted by the PAs that the certificate from CO for expansion plot number will be submitted within 03 months from the date of grant of this EC.
- IV. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked

green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).

- V. Ground water to be drawn for use in the project only after obtaining permission from the Competent Authority.
- VI. Environment management system including organization structure to be drawn to ensure compliance of EC conditions stipulated based on principles of Continual Improvement and periodical management review.
- VII. All raw material to be stored only under covered shed.
- VIII. PAs to offset (upto20%) consumption of conventional energy sources by promoting use of solar energy, passive energy utilization, optimum fenestration, shading effect and heat islands.
- IX. Developers to promote energy conservation measures such that it offsets not less than 02 % of connected load. It is to be achieved by solar panels etc meeting ECBC norms.
- X. Trees should be developed & maintained not less than 15% of project area.
- XI. Organic Waste Converter (OWC) to be installed of sufficient capacity such that all organic waste (bio degradable) generated is composted at source only.
- XII. Developers/Company to install STP of sufficient capacity such that all the sewer produced is treated and reused.
- XIII. Developers/Company to install Rain water harvesting structures such that all the roof top water runoff is collected and harvested including reuse on 100% basis.
- XIV. Developers/Company to conduct and submit carbon footprint and carbon sequestration study report including mitigation measures as a part of EC compliance.
- XV. Water runoff originating from open non constructed areas of project premises to be harvested /guided in such a way that it does not create water logging condition outside.
- XVI. Sufficient number of EV fast charging points to be installed.
- XVII. MSW Collection centre should be located in isolated and preferably unmanned area. Movement of the vehicle carrying waste should be under tarpaulin covered condition only. Route of vehicle should be such that it avoids residential areas as far as practical.
- XVIII. ISO 14k EMS system standard to be followed for implementation of EMPs with MRM in place for feedback to Sr management.
- XIX. A cycling tract to be provided in residential complex so as to save on fuel and make in campus movement environment friendly.

2. Chorbatiya Stone Mine of M/s East India Stone Quarry – 2 (Prop. : Mr. Imran Khan), Village : Chorbatiya, Thana : Saraiyaha, Thana no. : 38, Distt.: Dumka, Jharkhand (1.45 Ha).

(Proposal no.: SIA/JH/MIN/502031/2024)

Name of the consultant : Oceao-Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.

This is a new project which has been taken for appraisal on 22.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: Annual production of stone is 22,792 Cum Per Annum/61,538 Ton Per Annum and Daily Production is 75.97 Cum Per Day/205.13 Ton Per Day.

Project and Location Details:

S. No	Parameter	Details
1	Project Name	Chorbatiya Stone Mine of M/s EAST INDIA STONE QUARRY-2, Mouza- Chorbatiya, Thana- Saraiyaha, Thana No.-38 District- Dumka, Jharkhand
2	Lessee/ Proprietor	Shri Imran Khan
3	Lessee Address	Gram- Asanbani, Thana- Ranishwar, District- Dumka, Jharkhand-816118.
4	Lease Area	Ha: 1.457 Ha Acres: 3.60 Acres
5	Type of Land	Rajyati Land
6	Project Cost	30 Lakhs
7	EMP Budget	Capital: 27.76Lakhs Recurring: 5.5 Lakhs / year
8	New or Expansion	New
9	Mineable Reserves	1,13,302 Cum or 3,05,915.4 Ton
10	Mine Life	05 Years
11	Man power	18 persons
12	Water Requirement	Total water requirement is about 7.54 KLD=0.54 KLD (Drinking & Domestic Uses) + 3 (Plantation) KLD + 4.0 KLD (Water Sprinkling).
13	Water Source	by Authorised hired water tankers
14	DG Set / power	125 KVA (Temporary setup for Backup)
15	Crusher	Not Proposed
16	Nearest Water Body	Water bodies at 8.0 km
17	Nearest Habitation	Chorbatiya is about 0.98 km in SSE direction
18	Nearest Rail Station	Hansdiha Railway Station is about 2.64 Km in S direction.

19	Nearst Airport	:	Deoghar Airport is about 44.37 Km in WSW direction. 44.37 Km in WSW direction.
20	Nearst Forest	:	No forest within 5.0 KM lease area.
21	Road & Highways	:	SH-17 is about 1.96 km in WSW direction.
26	Seismic zone	:	Zone III as per seismic zone map of India

CO-ORDINATES

Latitude	Longitude
24° 38' 11.677" N	87° 05' 12.00"

LAND DETAILS

Khata no.	Plot no.
13	69, 70 & 71
29	49 & 67

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Dumka vide letter no. 824/M, dated 15.07.2024.
2	CO	:	The CO, Saraiyahat (Dumka) vide letter no. 261/Ra., dated 12.03.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Jharl" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Dumka vide memo no. 183/M, dated 16.02.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 792, dated 09.05.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Dumka Forest Division vide letter no. 675, dated 21.03.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Dumka District (Sl. no. 25, Page no. 284-285).
7	Gram Sabha	:	Gram Sabha conducted on 20.04.2022.







8	Mine Plan Approval	:	Approved by District Mining Officer, Dumka vide Memo No. 1096/M, dated 24.09.2024
9	Qualified Person	:	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	OCM & Semi-Mechanised	
2	Lease Area	:	3.60 ACRES / 1.457 HA	Life of Mine – 05 years
3	Waste Generation	:	5 years – 26365 Cum	
4	Stripping Ratio(t/m ³)	:	1:0.0	
5	Working Days	:	300	
6	Bench: size & No	:	6m x 6m	
7	Highest Elevation of lease Area	:	174AMSL	
8	Lowest Elevation of lease Area	:	168 MSL	
9	Ultimate Working Depth	:	144 above MSL	
10	Water Table	:	117 above MSL	
11	Topography of Mine	:	almost flat land with hillocks	
12	Explosive Requirement	:	51.44 kg	
13	Diesel/Fuel requirement	:	440 Litres per day	

Production Details

Year	Munrum in cum	Production of Stone in Cum	Production of Stone in Tonnes	Grade/Uses
1st	6468.00	22770.00	61479.00	Construction & Road
2nd	0.00	22716.00	61333.20	Construction & Road
3rd	15512.00	22568.00	60933.60	Construction & Road
4th	7112.00	22456.00	60631.20	Construction & Road
5th	0.00	22792.00	61538.40	Construction & Road
	29092.00	113302.00	305916.00	

production proposed in- 22792Cum/61538 Ton
Stripping Ratio in (t/m3)- 1:0.09

Land Use

LAND USE PATTERN			
	Existing	First to Fifth Years	After Life of Mine
Category	Area in Hectares	Area in Hectares	Area in Hectares
Quarry	0.307	0.980	0.987ha area Shall be converted into water reservoir
Haul Road	0.065	0.07	0.00
Proposed Crusher	0	0	Crusher not proposed
Green belt in Safety Zone	0	0.47	0.47
Dump with Paraper wall & Garland drain	0	0	0.00
Total area in use	0.372	1.457	1.457
Balance unused area	1.085	0	0.00
Balance used area	0	0	0.00
Total Applied Lease Area	1.457	1.457	1.457

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Place of Plantation	Spacing b/w plants	Total No. of Plants	Area Cover in Square Meters	Total Area in Ha.	Species
1st	Safety Zone	2.5 x 2.5	800	4700	0.47	Gulmohar, Gular, Sagwan, Fruit Bearing Trees Mango, Jack fruit, Guava
	Haul Road	3 x 3	752	600M Approach Road 600/3=200Plants 200x4row=800Pl	---	








				ants		
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			1552	4700	0.47	

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCLF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

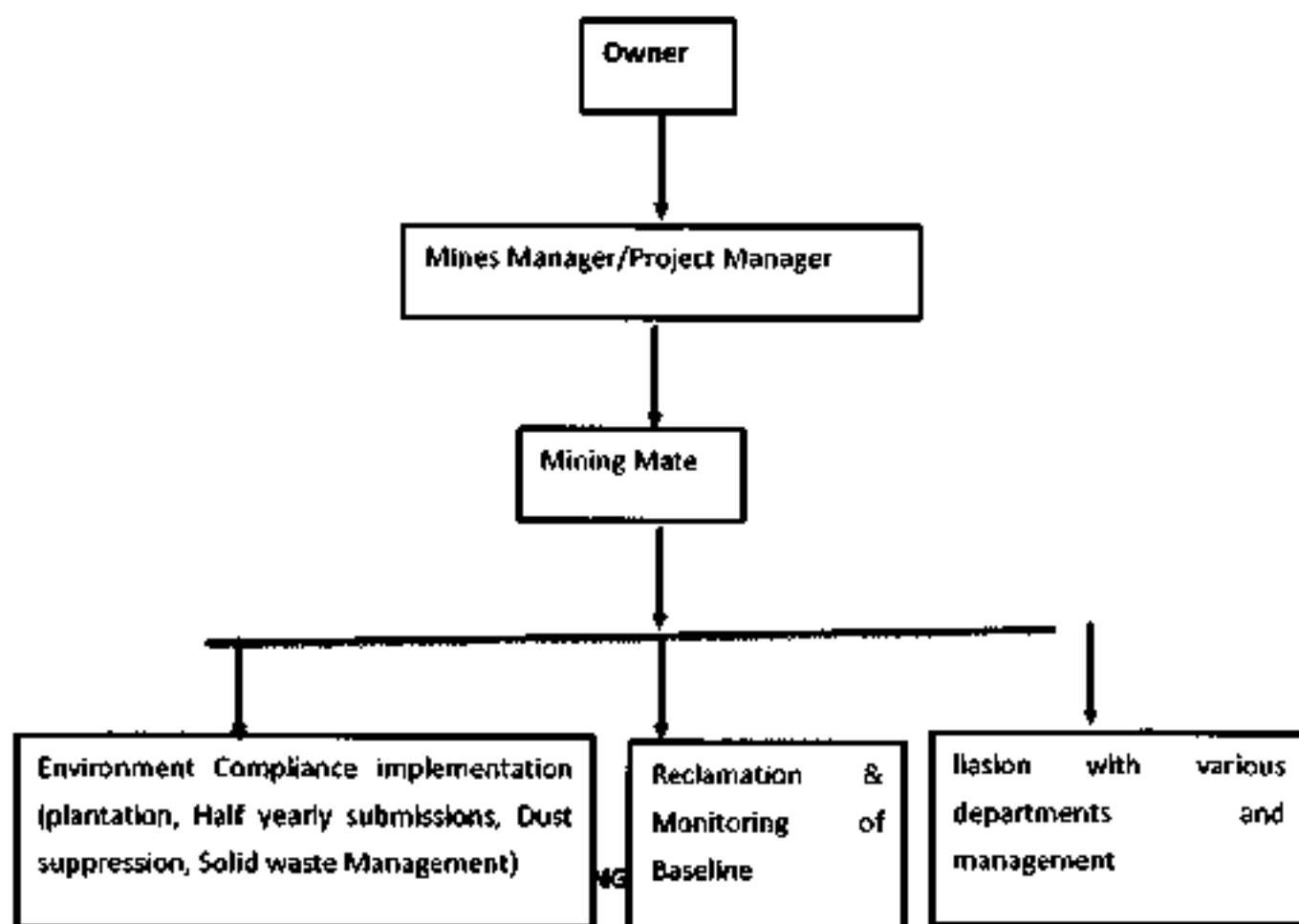
Environment Management Budget

PROPOSED FOR ENVIRONMENT MANAGEMENT COST						
S. No.	Mitigative measures to protect Environment	Criteria Pollutants	Capital Cost (In Lakh)	Recurring cost (In Lakh)	Implementation Responsibility	Frequency and Method
1.	Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine) One Water Tanker	Dust (PM 10 & PM 2.5)	19.5	1.8	Mining Mate supervised by Mine Manager	Daily Basis/Requirement Basis Register/Log book
	Solid waste management	Municipal Solid by workers	0.5	0.2		Record maintain & coordination with vendors

2.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @No. of plants 1552 x 500Rs.	No2, So2 & CO reduction Noise reduction	7.76	3.0	Mining Mate supervised by Mine Manager	Care taking @twice a week, Tree Inventory.
3.	Environment Monitoring (Air, Water, Noise& Soil Monitoring)	Deviation in Baseline	0	0.50	Out source to NABL Accredited Lab- Monitored by Mine Manager	Mine Manager Review of base line as per monitoring plan proposed
	TOTAL		27.76	0.5		

Environmental Monitoring Cell

ORGANIZATION CHART FOR ENVIRONMENT MANAGEMENT CELL



Supervision: Managed by Mines Manager with a qualified technical team.

Personnel: Includes skilled, semi-skilled, unskilled, and other third parties.

Responsibilities:

- ❖ Implement environmental control measures.
- ❖ Oversee reclamation planning and management.
- ❖ Manage air and water pollution control.
- ❖ Liaise with state and central statutory agencies.
- ❖ Develop greenbelt areas.

Performance Review: Assess corporate environmental performance and report non-compliances.

Remedial Actions: Suggest and implement actions for exceeding pollution limits.

Coordination:

Collect health statistics for workers and local population.

Act as a bridge for project implementation and Project Authorities

Facilitate afforestation efforts.

PROPOSED FOR ENVIRONMENT MANAGEMENT COST				
S. No.	Mitigative measures to protect Environment	Criteria Pollutants	Implementation Responsibility	Frequency and Method
<u>1.</u>	Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine) One Water Tanker	Dust (PM 10 & PM 2.5)	Mining Mate supervised by Mine Manager	Daily Basis/Requirement Basis Register/Log book
	Solid waste management	Municipal Solid by workers		Record maintain & coordination with vendors
<u>2.</u>	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @No. of plants 1550 x 500Rs.	No2, So2 & CO reduction Noise reduction	Mining Mate supervised by Mine Manager	Care taking@twice a week, Tree Inventory,
<u>3.</u>	Environment Monitoring (Air, Water, Noise& Soil Monitoring)	Devlation in Baseline	Outsource to NABL Accredited Lab- Monitored by Mine Manager	Mine Manager Review of base line as per monitoring plan proposed

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx In the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- The Boundary Pillars of the proposed mine lease area will be maintained properly.
- One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- If any tree felling than necessary permission shall be taken from the competent authority.
- Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.



- I. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Solid Waste Management

The waste encountered during the mining operation is mainly. During Plan period gritty soil removed will be dumped at northern side with suitable precaution. Some quantity of the removed gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

i. Use of Sharp Drill Bits

ii. Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

iii. Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced.
- Optimum quantity of explosives would be used.
- Blasting to be done during favourable weather conditions.

iv. Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

v. Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

vi. Movement of Trucks on Road – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken:

- Regular water sprinkling on Gaur road by using water Tankers.
- Regular repair of Haul road.
- All Trucks carrying stone outside lease area will have PUC certificate



RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the Following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

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The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to over charging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonator shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks /tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any in coming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge



of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Chorbatiya Stone Mine of M/s East India Stone Quarry – 2 (Prop. : Mr. Imran Khan), Village : Chorbatiya, Thana : Saraiyahat, Thana no. : 38, Distt.: Dumka, Jharkhand (1.45 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

3. Chorbatiya Stone Mine of M/s East India Stone Quarry (Prop. : Mr. Imran Khan), Village : Chorbatiya, Thana : Saraiyahat, Thana no. : 38, Distt.: Dumka, Jharkhand (2.282 Ha).

(Proposal no.: SIA/JH/MIN/502035/2024)

Name of the consultant :Oceao-Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.

This is a new project which has been taken for appraisal on 22.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: Stone 22,330 Cum per Year/60,291 tonnes per Year or 74.43 Cum per day/200.97 Tonnes

Project and Location Details:

S. No	Parameter	Details
1	Project Name	: M/s EAST INDIA STONE QUARRY
2	Lessee/ Proprietor	: Shri Imran Khan
3	Lessee Address	: Gram- Asanbani, Thana- Ranishwar, District- Dumka, Jharkhand-816118.
4	Lease Area	: Ha: 2.282 Ha Acres: 5.64 Acres
5	Type of Land	: Raiyati Land
6	Project Cost	: 31 Lakhs
7	EMP Budget	: Capital: 28.32 Lakhs Recurring: 5.5 Lakhs / year
8	New or Expansion	: New
9	Mineable Reserves	: 3,00,942 Ton 1,11,460 Cum
10	Mine Life	: 05 Years

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11	Man power	:	18 persons		
12	Water Requirement	:	Total water requirement is about 7.54 KLD=0.54 KLD (Drinking & Domestic Uses) + 3 (Plantation) KLD + 4.0 KLD (Water Sprinkling).		
13	Water Source	:	by Authorised hired water tankers		
14	DG Set / power	:	125 KVA (Temporary setup for Backup)		
15	Crusher	:	Not Proposed		
16	Nearest Water Body	:	1.24 Is about Chorbatiya km in SSE direction.		
17	Nearest Habitation	:	Chorbatiya is about 0.98 km in SSE direction		
18	Nearest Rail Station	:	Hansdiha Railway Station is about 2.64 Km in S direction.		
19	Nearest Airport	:	Deoghar Airport is about 44.37 km in WSW direction.		
20	Nearest Forest	:	Semra Kola P.F.	1.00	NE
		:	Salgatand Rocks and Forest	3.52	ESE
		:	Machanitari P.F.	2.80	NNE
		:	Paharpur P.F.	3.00	NNE
21	Road & Highways	:	SH-17 is about 1.96 km in WSW direction.		
26	Seismic zone	:	Zone III as per seismic zone map of India		

CO-ORDINATES

Latitude	Longitude
24°38'20.30330943"	87°05'10.93441781"
24°38'18.59768709"	87°05'1207977610"

LAND DETAILS

Khata no.	Plot no.
17/29	43/47, 45/50, 46/51, 47/47 & 48/51
19/18	3/10, 4/11, 8/9 & 9/8
27/34	2/2, 3/2 & 4/2

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (Loi) has been issued by District Mining

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		Officer, Dumka vide letter no. 733/M, dated 28.06.2024.
2	CO	The CO, Saraiyahat (Dumka) vide letter no. 532/Ra., dated 05.04.2022 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatlyan & Register II.
3	DMO	DMO, Dumka vide memo no. 921/M, dated 07.08.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	DFO, Wildlife Division, Hazaribag vide letter no. 576, dated 23.03.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	Division Forest Officer, Dumka Forest Division vide letter no. 317, dated 12.02.2022 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	This project is mentioned in approved DSR of Dumka District (Sl. no. 12, Page no. 280).
7	Gram Sabha	Gram Sabha conducted on 20.12.2021.
8	Mine Plan Approval	Approved by District Mining Officer, Dumka vide Memo No. 1030/M, dated 09.09.2024.
9	Qualified Person	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	: OCM & Semi-Mechanised
2	Lease Area	: 5.64 ACRES / 12.282 HA Life of Mine – 05 years
3	Waste Generation	: 5 years – 26365 Cum
4	Stripping Ratio(t/m ³)	: 1:0.11
5	Working Days	: 300
6	Benchies: size & No	: 6m x 6m
7	Highest Elevation of lease Area	: 168AMSL
8	Lowest Elevation of lease Area	: 167 MSL
9	Ultimate Working Depth	: 144 above MSL
10	Water Table	: 117 above MSL

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11	Topography of Mine	:	almost flat land with hillocks
12	Explosive Requirement	:	51.44 kg
13	Diesel/Fuel requirement		440 Litres per day

Production Details

Year	Murram in cum	Production of Stone in Cum	Production of Stone in Tonnes	Grade/Uses
1st	6250.00	22330.00	60291.00	Construction & Road
2nd	0.00	22320.00	60264.00	Construction & Road
3rd	0.00	22250.00	60075.00	Construction & Road
4th	11190.00	22320.00	60264.00	Construction & Road
5th	8925.00	22240.00	60048.00	Construction & Road
(A)	26365.00	111460.00	300942.00	
production proposed in- 22330Cum/60291 Ton				
Stripping Ratlon in (m3/t)- 1:0.00				

Land Use

LAND USE PATTERN			
Category	Existing Area in Hectares	First to Fifth Years Area in Hectares	After Life of Mine Area in Hectares
Quarry	0.293	1.243	1.246ha area Shall be converted into water reservoir
Haul Road	0.00	0.003	0.000
Proposed Crusher	0.00	0.00	Crusher not proposed
Green belt in Safety Zone	0.00	0.625	0.625 (Proposed for plantation)
Nala Barrier	0.00	0.411	0.411(Proposed plantation in two row 2.5m x 2.5m)
Dump with Parapet wall & Garland drain	0.00	0.00	0.00
Total area in use	0.293	2.282	2.282
Balance unused area	1.989	0.00	0.00
Balance used area	0.00	0.00	0.00
Total Applied Lease Area	2.282	2.282	2.282

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Place of	Spacing	Total	Area Cover in	Total	Species

	Plantation	b/w plants	No. of Plants	Square Meters	Area in Ha.	
1st	Safety Zone	2.5 x 2.5	1000	6250	0.625	Gulmohar, Gular, Shami, Sagwan, Sakua Fruit Bearing Trees Mango, Jack fruit, Guava
	Haul Road	3 x 3	532	400M Approach Road 400/3=133Plants 133x4row=532Plants	---	
	Nala Barrier	2.5x2.5	132		0.411	
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			1664	6250	1.036	

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

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	TOTAL		28.32	5.5		

Environment Management Cell

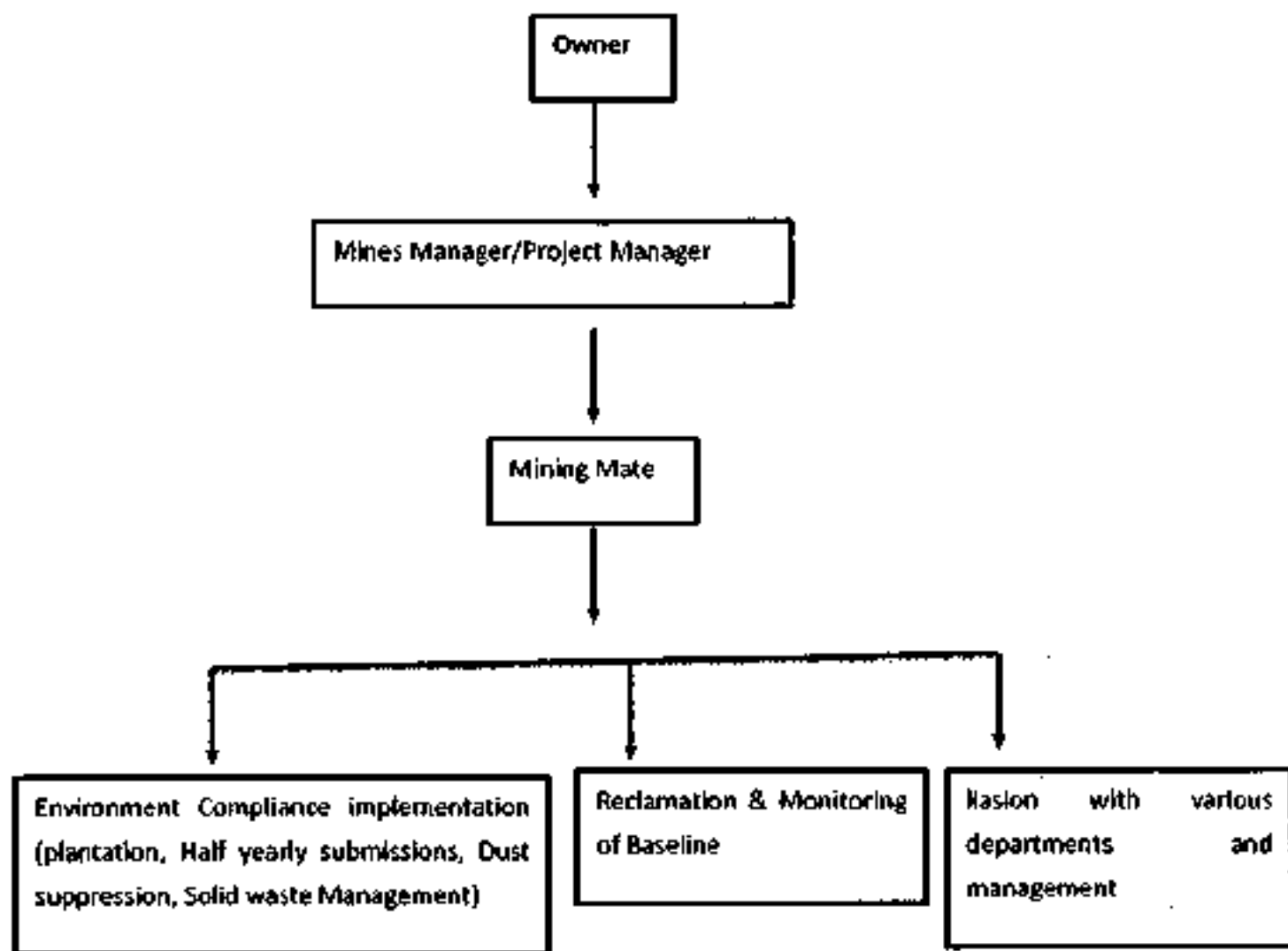


Fig: Organization Chart for Environment Management Cell

FUNCTIONS OF ENVIRONMENT MONITORING CELL

- Supervision: Managed by Mines Manager with a qualified technical team.
- Personnel: Includes skilled, semi-skilled, unskilled, and other third parties.
- Responsibilities:
 - Implement environmental control measures.
 - Oversee reclamation planning and management.
 - Manage air and water pollution control.
 - Uaise with state and central statutory agencies.
 - Develop greenbelt areas.
- Performance Review: Assess corporate environmental performance and report non-compliances.
- Remedial Actions: Suggest and implement actions for exceeding pollution limits.
- Coordination:

Collect health statistics for workers and local population.

Act as a bridge for project implementation and Project Authorities

Facilitate afforestation efforts.

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx In the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring. Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.

- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Solid Waste Management

The waste encountered during the mining operation is mainly, During Plan period gritty soil removed will be dumped at northern side with suitable precaution. Some quantity of the removed gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

i. Use of Sharp Drill Bits

ii. Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

iii. Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced.
- Optimum quantity of explosives would be used.
- Blasting to be done during favourable weather conditions.

iv. Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

v. Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

vi. Movement of Trucks on Road – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken:

- Regular water sprinkling on Haul road by using water Tankers
- Regular repair of Haul road.
- All Trucks carrying stone outside lease area will have PUC certificate

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard Identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE. - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the Following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.

- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to over charging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people

become aware of the blasting activities being undertaken in the area and take appropriate precautions.

- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonator shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks /tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any in coming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Chorbatiya Stone of M/s East India Stone Quarry (Prop. : Mr. Imran Khan), Village : Chorbatiya, Thana : Saraiyahat, Thana no. : 38, Distt.: Dumka, Jharkhand (2.282 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

1. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of

MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Mo Ke Noom" and the details of the same shall be uploaded in the MerLiFE Portal (<https://merilife.nic.in>).

- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

4. Dumarghati Stone Mine of M/s Samid Stone Works (Prop. : Mr. Samid Ansari), Village : Dumarghati, Thana no. : 38, Thana : Maheshpur, Distt.: Pakur, Jharkhand (2.46 Ha).

(Proposal no.: SIA/JH/MIN/500943/2024)

Name of the consultant :Oceao-Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.

This is a new project which has been taken for appraisal on 22.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 52,790 Cum per Year/1,42,533 tonnes per Year or 175.96 Cum per day/475.11 Tonnes Per day.

Project and Location Details:

S. No	Parameter	Details
1	Project Name	Dumarghati Stone Mine (M/s Samid Stone Works)
2	Lessee/Proprietor	Shri Samid Ansari
3	Lessee Address	Gram- Rampur, Thana- Pakur, District-Pakur Jharkhand
4	Lease Area	Ha: 2.46 Ha Acres: 6.08 Acres
5	Type of Land	Raiyat Land
6	Project Cost	40 Lakhs
7	EMP Budget	Capital: 46.82 Lakhs Recurring: 6.6 Lakhs / year
8	New or Expansion	New
9	Mineable Reserves	3,39,360 Cum 9,16,272 Tonnes
10	Mine Life	7.0 Year
11	Man power	22 persons
12	Water Requirement	Total water requirement is about 7.66 KLD = 0.66 KLD (Drinking & Domestic Uses) + 4.0 (Plantation) KLD + 3.0 KLD (Dust Suppression).
13	Water Source	by Authorised hired water tankers
14	DG Set / power	125 KVA (Temporary setup for Backup)
15	Crusher	No
16	Nearest Water Body	Dumarghati Village Pond is 0.44 km in SSE Direction
17	Nearest Habitation	Dumarghati is about 0.36 km in S direction
18	Nearest Rail Station	Banshal Bridge Railway Station is about 28.41 km in E direction.
19	Nearest Airport	Sidokanhu Airport is about 43.15 km in SW direction.
20	Nearest Forest	Reserved Forest, Pachwara 9.20 NW
21	Road & Highways	NH-333A is about 23.46 km in NNE direction. SH-18 is about 2.35 km in W direction.

CO-ORDINATES

S. No.	Latitude	Longitude	S. No.	Latitude	Longitude
1	24°30'0.143"N	87°34'42.784"E	12	24°29'52.737"N	87°34'46.005"E
2	24°29'59.907"N	87°34'45.013"E	13	24°29'52.965"N	87°34'45.263"E
3	24°29'59.823"N	87°34'47.158"E	14	24°29'54.578"N	87°34'45.124"E
4	24°29'59.282"N	87°34'48.399"E	15	24°29'54.651"N	87°34'44.036"E
5	24°29'58.562"N	87°34'48.104"E	16	24°29'54.358"N	87°34'43.527"E

6	24°29'57.258"N	87°34'47.954"E	17	24°29'54.385"N	87°34'43.014"E
7	24°29'56.331"N	87°34'47.561"E	18	24°29'55.811"N	87°34'42.857"E
8	24°29'55.816"N	87°34'46.936"E	19	24°29'57.399"N	87°34'43.387"E
9	24°29'55.006"N	87°34'47.080"E	20	24°29'57.851"N	87°34'42.911"E
10	24°29'53.643"N	87°34'46.916"E	21	24°29'58.507"N	87°34'42.939"E
11	24°29'52.712"N	87°34'46.733"E	22	24°29'59.491"N	87°34'42.998"E

LAND DETAILS

Khata no.	Plot no.	Khata no.	Plot no.
05	172 (P)	20	173 (P)
08	182 & 183	40	218 (P)
22	177 & 178	26	179
19	180 & 181	28	174 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 1628/M, dated 28.09.2024.
2	CO	The CO, Maheshpur vide letter no. 620/Ra., dated 24.08.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khattyan & Register II and also mentioned that the habitation of 15-16 houses at a distance of 405 meters of proposed project site, accordingly PAs has submitted EMP for the same.
3	DMO	DMO, Pakur vide memo no. 1631/M, dated 28.09.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	DFO -cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2222, dated 09.09.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	Division Forest Officer, Pakur Forest Division vide letter no. 1615, dated 19.09.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	The DMO, Pakur has been certified vide memo no. 1630/M, dated 28.09.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 102, Page no. 130).
7	Gram Sabha	BDO, Maheshpur (Pakur) vide letter no. 1115/Vi. Dated

		24.08.2024 informed that Gram Sabha conducted on 23.08.2024.
8	Mine Plan Approval	Approved by District Mining Officer, Pakur vide Memo No. 1781/M, dated 17.10.2024.
9	Qualified Person	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	: OCM & Semi-Mechanised
2	Lease Area	: 6.08 ACRES / 2.46 HA Life of Mine - 6.0 years
3	Waste Generation	: 5 years- 39630.00
4	Stripping Ratio(t/m ³)	: 1:0.05
5	Working Days	: 300
6	Benchets: size & No	: 6m x 6m
7	Highest Elevation of lease Area	: 80 above MSL
8	Lowest Elevation of lease Area	: 78 above MSL
9	Ultimate Working Depth	: 50 above MSL
10	Water Table	: 34 above MSL
11	Topography of Mine	: almost flat land with hillocks
12	Explosive Requirement	: Tentative 118.63 kg/per day
13	Diesel/Fuel requirement	: 556 Litres per day

Production Details

Year	Generation of Waste/O.Bin cum	Production of Stone in Cum	Production of Stone in Tonnes	Grade/Uses
1st	17500.00	52290.00	141183.00	Construction & Road
2nd	00	52710.00	142317.00	Construction & Road
3rd	8750.00	52640.00	142128.00	Construction & Road
4th	13380.00	52790.00	142533.00	Construction & Road
5th	00	52680.00	142236.00	Construction & Road
Total	39630.00	263110.00	710397.00	
Maximum production proposed in- 52,790 Cum/1,42,533 Ton				
Stripping Ratio in (t/m ³)-1:0.05				

Land Use

LAND USE PATTERN			
	Existing	First to Fifth Years	After Life of Mine
Category	Area In Hectares	Area in Hectares	Area in Hectares
Quarry	0.00	1.581 (0.18ha Backfilled)	1.940 (0.265ha Backfilled and proposed for plantation, 1.675ha converted into water reservoir)
Haul Road	0.00	0.030	0.00
Proposed Crusher	0.00	0.00	0.00
Green belt in Safety Barrier	0.00	0.52	0.52
Dump with Parapet wall & Garland drain	0.00	0.00	Top soil will be used for plantation in first year and rest OB will be used road dressing and Backfilling
Total area in use	0.00	2.131	2.462
Balance unused area	2.46	0.331	0.00
Balance used area	0.00	0.00	0.00
Total Applied Lease Area	2.462	2.462	2.462

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Place of Plantation	Spacing b/w plants	Total No. of Plants	Area Cover in Square Meters	Total Area in Ha.	Species
1st	Safety Zone	2.5 x 2.5	832	5200	0.52	Gulmohar, Gular, Sagwan, Sakua <u>Fruit Bearing Trees</u> Mango, Jackfruit, Guava
	Haul Road	3 x 3	532	400M Approach Road $400/3=133\text{Plants}$ $133 \times 4\text{row}=532\text{Plant}$		
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care &	---	---	---	---	

	Protection					
5th	Care & Protection	---	---	---	---	
Total			1364	5200	0.52	

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Budget

PROPOSED FOR ENVIRONMENT MANAGEMENT implement						
S. No.	Mitigative measures to protect Environment	Criteria Pollutants	Capital Cost (In Lakh)	Recurring cost (In Lakh)	Implementation Responsibility	Frequency and Method
1.	Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine) One Water Tanker	Dust (PM 10 & PM 2.5)	39	2.9	Mining Mate supervised by Mine Manager	Daily Basis/Requirement Basis Register/Log book
	Solid waste management	Municipal Solid by workers	1	0.1		Record maintain & coordination with vendors
2.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @No. of plants 1364x 500Rs.	No2,So2 & CO reduction Noise reduction	6.82	2.0	Mining Mate supervised by Mine Manager	Care taking@twice a week, Tree Inventory.
3.	Environment Monitoring (Air, Water, Noise& Soil Monitoring)	Deviation in Baseline	Nil	1.6	Out source to NABL Accredited Lab- Monitored by Mine Manager	Mine Manager Review of base line as per monitoring plan proposed
	TOTAL		46.82	6.6		

In consonance with NGT guidelines dated 21.07.2020, when blasting is involved a setback of a minimum of 200 meters should be left from the habitation area towards mine site. The distance from the habitat to the mine site is 405 m as per the letter issued by the CO, Maheshpur vide letter no 60.2/Ra. Dated 24/08/2024.

Additional Cost for Blast Managements

Blasting		
Training and Awareness of personnel during Blasting operations	50,000	0
Provision of safe distance from the Project site for the settlements		
Blasting shelters and Sirens	50,000	5,000
Portable Drop Arm Barrier	2,00,000	10,000
Total cost	3,00,000	15,000

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
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- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

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Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

i. Use of Sharp Drill Bits

ii. Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

iii. Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced.
- Optimum quantity of explosives would be used.
- Blasting to be done during favourable weather conditions.

iv. Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

v. Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

vi. Movement of Trucks on Road – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken:

- Regular water sprinkling on Haul road by using water Tankers.
- Regular repair of Haul road.
- All Trucks carrying stone outside lease area will have PUC certificate

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard Identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily Injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.

- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to over charging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people

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become aware of the blasting activities being undertaken in the area and take appropriate precautions.

- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonator shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overtaking vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks /tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any in coming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

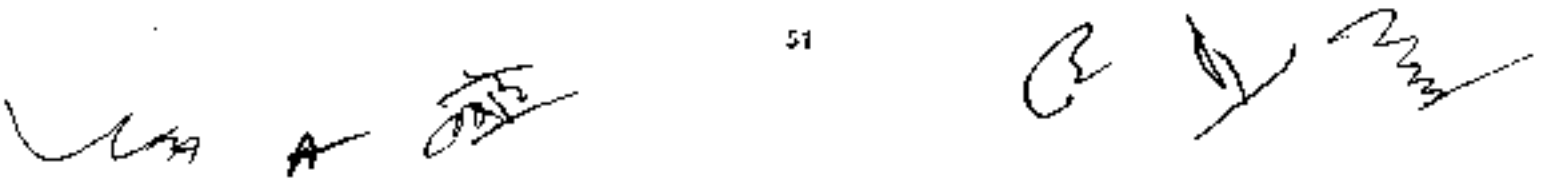
Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Dumarghati Stone Mine of M/s Samid Stone Works (Prop. : Mr. Samid Ansari), Village : Dumarghati, Thana no. : 38, Thana : Maheshpur, Distt.:

Pakur, Jharkhand (2.46 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – I along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

5. Paderkola Stone Mine of M/s L.S.G. Mining Pvt. Ltd., Village : Paderkola, Anchal : Hiranpur, Distt.: Pakur, Jharkhand (2.833 Ha).

(Proposal no.: SIA/JH/MIN/502067/2024)



Name of the consultant :Oceao-Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.

This is a new project which has been taken for appraisal on 22.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 73160 Cum Per Year/ 197531 tonnes Per Year or 243 Cum Per Day/658 Tonnes Per day

Project and Location Details:

S. No	Parameter	Details												
1	Project Name	M/s L.S.G. Mining Pvt. Ltd.												
2	Lessee/ Director	Shri Rajeebul Shaikh & Other												
3	Lessee Address	Village- Paderkola, Anchal- Hiranpur, District: Pakur, Jharkhand												
4	Lease Area	Ha: 2.833 Ha Acres: 7.0 Acres												
5	Type of Land	Raiyati Land												
6	Project Cost	65 Lakhs												
7	EMP Budget	Capital: 38.1 Lakhs Recurring: 5.0 Lakhs / year												
8	New or Expansion	New												
9	Mineable Reserves	5,11,761.2 Cum 13,81,755 Tonnes												
10	Mine Life	07 Years												
11	Man power	18 persons												
12	Water Requirement	Total water requirement is about 13.63 KLD=0.63 KLD (Drinking & Domestic Uses) + 5.0 (Plantation) KLD + 8.0 KLD (Water Sprinkling).												
13	Water Source	by Authorised hired water tankers												
14	OG Set / power	125 KVA (Temporary setup for Backup)												
15	Crusher	Not Proposed												
16	Nearest Water Body	Paderkola Pond is about 0.76 km in WSW direction.												
17	Nearest Habitation	Paderkola is about 0.76 km in N direction												
18	Nearest Rail Station	Pakur Railway Station is about 11.1 km in SE direction.												
19	Nearest Airport	Sido Kanhu Airport, is about 58.66 km in SW direction.												
20	Nearest Forest	<table><tr><td>DHARNIPAHAR PF</td><td>3.76</td><td>E</td></tr><tr><td>GANROPAHARI FOREST</td><td>4.73</td><td>WNW</td></tr><tr><td>DHANGHARA FOREST</td><td>6.19</td><td>NE</td></tr><tr><td>HARINDUBA PF</td><td>13.76</td><td>WSW</td></tr></table>	DHARNIPAHAR PF	3.76	E	GANROPAHARI FOREST	4.73	WNW	DHANGHARA FOREST	6.19	NE	HARINDUBA PF	13.76	WSW
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DHANGHARA FOREST	6.19	NE												
HARINDUBA PF	13.76	WSW												
21	Road & Highways	NH-133A is about 8.5 km in N direction.												

CO-ORDINATES

Latitude	Longitude
N 24°35'41.961"	E 87°41'49.957"
N 24°35'51.124"	E 87°41'56.124"

LAND DETAILS

Khata no.	Plot no.
21	438 (P)
27	381, 382, 383, 384, 385, 386, 387, 388 & 389

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LOI) has been issued by District Mining Officer, Pakur vide memo no. 1655/M, dated 28.09.2024.
2	CO	:	The CO, Hiranpur vide letter no. 57/Ra., dated 05.02.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jharl" in R.S. Khatiyani & Register II.
3	DMO	:	DMO, Pakur vide memo no. 1684/M, dated 08.10.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild life	:	DFO -cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 286, dated 07.02.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide letter no. 297, dated 15.02.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 1685/M, dated 08.10.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 118, Page no. 119).
7	Gram Sabha	:	BDO, Hiranpur vide letter no. 277/Vi. Dated 04.03.2024 informed that Gram Sabha conducted on 29.02.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 1752/M, dated 15.10.2024.

9	Qualified Person	:	Shri Vidya Bhushan Mishra vide letter dated 21.10.2024 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	OCM & Semi-Mechanised	
2	Lease Area	:	2.833 ha/ 7.00 Acre	Life of Mine – 07 years
3	Waste Generation	:	5 years– 69 // 1 Cum	
4	Stripping Ratio(t/m ³)	:	1:0.12	
5	Working Days	:	300	
6	Bench: size & No	:	6m x 6m	
7	Highest Elevation of lease Area	:	116MSL	
8	Lowest Elevation of lease Area	:	104 MSL	
9	Ultimate Working Depth	:	86MSL	
10	Water Table	:	70 MSL	
11	Topography of Mine	:	Undulating Small hillocks	
12	Explosive Requirement	:	21.26 kg	
13	Diesel/Fuel requirement	:	440 litres per day	

Production Details

Year	Production of Stone in Cum	Production of Stone in Tonnes	Overburden in cum	Intercalated waste in Cum	Total Waste in Cum
1st	72223	195002	18632	3801	22433
2nd	72481	195699	0	3815	3815
3rd	72578	195961	22032	3820	25852
4th	72675	196223	9996	3825	13821
5th	73160	197531	0	3851	3851
Total	363117	980415	50660	19111	69771

Land Use

Land Utilization	Existing Land use	At the end of plan	At Conceptual period

	(Ha)	period (Ha)	(Ha)
Excavation	0.0	2.153 (0.154ha shall be backfilled)	2.153 (0.323ha area shall be Backfilled, 1.351ha converted in to water reservoir & 0.479ha shall be left as dead benches)
Waste Dump	0.00	Nil (waste dump to be removed and backfilled)	Nil
Road	0.0	0.00	0.0
Infrastructure (Crusher)	0.0	0.0(at quarry Bottom)	0.0
Safety Zone Plantation	0.0	0.680	0.680
Total	0.00	2.833	2.833
Unused Area	2.833	0.00	0.00
Total Lease Area	2.833		

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Place of Plantation	Spacing b/w plants	Total No. of Plants	Area Cover in Square Meters	Total Area in Ha.	Species
1st	Safety Zone	2.5 x 2.5	973	3160	0.316	Safety Zone Gulmohar, Gular, Sagwan, Sakua Along the Rd. fruit bearing trees Mango, Jackfruit,
	Haul Road	3.0 x 3.0	105	79 m Approach Rd. Two row both side 79/3=26 26*4= 105Plants		
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	

4th	Care & Protection	---	---	---	---	Guava,
5th	Care & Protection	---	---	---	---	
Total			1078	3160	0.316	

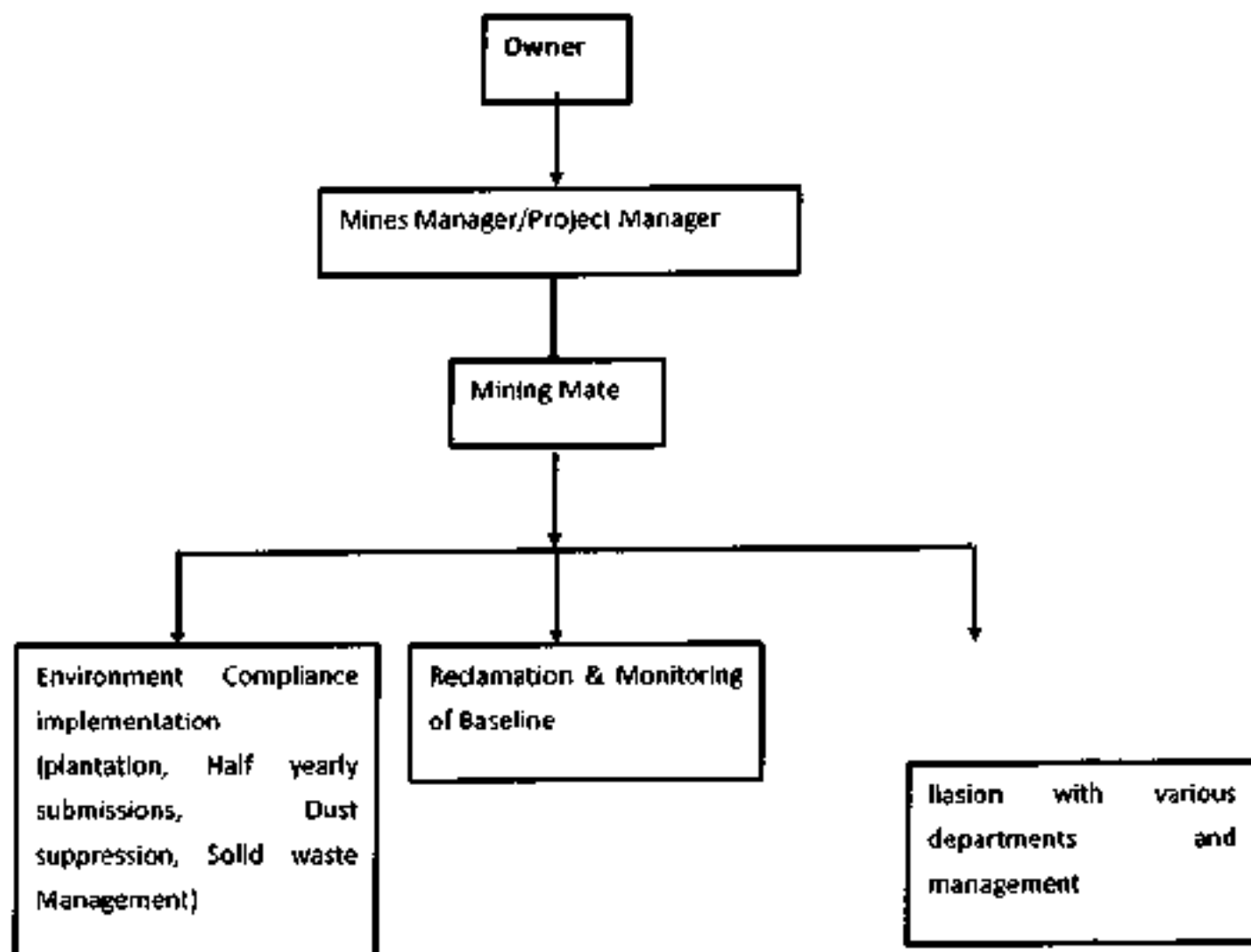
- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Budget

PROPOSED FOR ENVIRONMENT MANAGEMENT COST						
S. No.	Mitigative measures to protect Environment	Criteria Pollutants	Capital Cost (In Lakh)	Recurring cost (In Lakh)	Implementation Responsibility	Frequency and Method
1.	Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine) One Water Tanker	Dust (PM 10 & PM 2.5)	19.0	2.4	Mining Mate supervised by Mine Manager	Daily Basis/Requirement Basis Register/Log book
	Solid waste management	Municipal Solid by workers	1.0	0.1		Record maintain & coordination with vendors
2.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and	No2,So2 & CO reduction Noise reduction	5.39	2.0	Mining Mate supervised by Mine Manager	Care taking@twice a week, Tree Inventory,

	fences) @No. of plants 1078 x 500Rs.					
3.	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	Deviation in Baseline	Nil	0.50	Out source to NABL Accredited Lab. Monitored by Mine Manager	Mine Manager Review of base line as per monitoring plan proposed
	TOTAL		25.39	5.0		

• **Environment Management Cell**



• **Function of Environment Management Cell**

- **Supervision:** Managed by Mines Manager with a qualified technical team.
- **Personnel:** Includes skilled, semi-skilled, unskilled, and other third parties.
- **Responsibilities:**
 - Implement environmental control measures.
 - Oversee reclamation planning and management.
 - Manage air and water pollution control.
 - Liaise with state and central statutory agencies.

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- Develop greenbelt areas.
- **Performance Review:** Assess corporate environmental performance and report non-compliances.
- **Remedial Actions:** Suggest and implement actions for exceeding pollution limits.
- **Coordination:**

Collect health statistics for workers and local population.

Act as a bridge for project implementation and Project Authorities

Facilitate afforestation efforts.

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx in the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring. Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.

- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Solid Waste Management

The waste encountered during the mining operation is mainly. During Plan period gritty soil removed will be dumped at northern side with suitable precaution. Some quantity of the removed gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

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Mitigation measures:

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- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.

- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to over charging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how

risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonator shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks /tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any in coming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operation.
- Only trained drivers will be hired.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Paderkola Stone Mine of M/s L.S.G. Mining Pvt. Ltd., Village : Paderkola, Anchal : Hiranpur, Distt.: Pakur, Jharkhand (2.833 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the

LA

A

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CS

Y

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area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests. Summary findings of same to be submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

6. Paharpur Stone Deposit of Partner : Shri Arun Kumar Sah & Shri Lal Babu Ansari, Village : Paharpur, Anchal : Shikaripara, Distt.: Dumka, Jharkhand (2.363 Ha).

(Proposal no.: SIA/JH/MIM/ 501752/2024)

Name of the consultant : Ocean-Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.

This is a new project which has been taken for appraisal on 22.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 64,829 Cum per Year/1,75,038 tonnes per Year or 216.09 Cum per day/583.46 Tonnes Per day.

Project and Location Details:

S. No	Parameter	Details
1	Project Name	: Paharpur Stone Deposit

2	Partner's	:	Shri Arun Kumar Sah & Shri Lal Babu Ansari		
3	Lessee Address	:	Village+PO+PS- Sikaripara, District- Dumka, Jharkhand.		
4	Lease Area	:	Ha: 2.363 Ha	Acres: 5.84 Acres	
5	Type of Land	:	Raiyati Land		
6	Project Cost	:	54 Lakhs		
7	EMP Budget	:	Capital: 37.4Lakhs	Recurring: 5.0Lakhs / year	
8	New or Expansion	:	New		
9	Mineable Reserves	:	6,24,024.4 Cum	16,84,866Tonnes	
10	Mine Life	:	10 Years		
11	Man power	:	18 persons		
12	Water Requirement	:	Total water requirement is about 13.63 KLD=0.63 KLD (Drinking & Domestic Uses) + 5.0 (Plantation) KLD + 8.0 KLD (Dust Suppression).		
13	Water Source	:	The drinking water will be available from nearby village by tractor tank manually by labors at the site.		
14	DG Set / power	:	125 KVA (Temporary setup for Backup)		
15	Crusher	:	Not Proposed		
16	Nearest Water Body	:	Hanpur River is about 0.63 km in NNW direction.		
17	Nearest Habitation	:	Haripur is about 0.36 km in WNW direction		
18	Nearest Rail Station	:	Pinargaria Railway Station is about 5.9 km in E direction.		
19	Nearest Airport	:	Deoghar Airport, is about 94.29 km in WNW direction. Sido Kanhu Airport, is about 31.84 km in W direction.		
20	Nearest Forest	:	KARAKATA P.F.	7.19	WNW
			PURPAHAR P.F.	5.43	WSW
			CHAI PANI P.F.	9.03	NW
21	Road & Highways	:	NH-114A is about 2.77 km in N direction.		

CO-ORDINATES

S. No.	Latitude	Longitude	S. No.	Latitude	Longitude
1	24°11' 27.795" N	87°35' 10.846" E	11	24° 11' 27.765" N	87° 35' 18.110" E

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2	24°11' 28.077" N	87°35' 12.326" E	12	24° 11' 26.971" N	87° 35' 18.650" E
3	24°11' 28.373" N	87°35' 13.523" E	13	24° 11' 25.200" N	87° 35' 18.213" E
4	24° 11' 29.041" N	87°35' 13.982" E	14	24° 11' 23.311" N	87° 35' 17.070" E
5	24°11' 28.874" N	87°35' 14.586" E	15	24° 11' 21.935" N	87° 35' 15.997" E
6	24°11' 28.014" N	87°35' 14.941" E	16	24° 11' 23.818" N	87° 35' 14.281" E
7	24°11' 27.560" N	87°35' 16.127" E	17	24° 11' 24.749" N	87° 35' 13.247" E
8	24°11' 27.252" N	87°35' 16.927" E	18	24° 11' 26.052" N	87° 35' 11.565" E
9	24°11' 27.166" N	87°35' 17.751" E	19	24° 11' 27.003" N	87° 35' 11.960" E
10	24°11' 28.279" N	87°35' 17.845" E			

LAND DETAILS

Khata no.	Plot no.
14 & 24	818, 819, 820, 821 (P), 822 (P), 823 (P) & 824 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LOI) has been issued by District Mining Officer, Dumka vide letter no. 959/M, dated 16.08.2024.
2	CO	:	The CO, Shikaripara vide letter no. 182/Ra., dated 28.02.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatyan & Register II.
3	DMO	:	DMO, Dumka vide memo no. 455/M, dated 28.03.2023 certified that 01 other mining lease area (3.43 Acre) exists within 500 meters radius from proposed project site and total area is 9.88 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 468, dated 04.03.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.

5	DFO Territorial	:	Division Forest Officer, Dumka Forest Division vide letter no. 626, dated 28.02.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Dumka District (SI no. 47, Page no. 289).
7	Gram Sabha	:	Gram Sabha conducted on 09.12.2022.
8	Mine Plan Approval	:	Approved by District Mining Officer, Dumka vide Letter No. 1132/M, dated 07.10.2024.
9	Qualified Person	:	Shri Vidya Bhushan Mishra vide letter dated 21.10.2024 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	OCM & Semi-Mechanised
2	Lease Area	:	2.363 Ha / 5.84 Acre Life of Mine – 10 years
3	Waste Generation	:	5 years 61301
4	Stripping Ratio(t/m^3)	:	1:0.18
5	Working Days	:	300
6	Benchest size & No	:	6m x 6m
7	Highest Elevation of lease Area	:	112mRL
8	Lowest Elevation of lease Area	:	106 mRL
9	Ultimate Working Depth	:	66 mRL
10	Water Table	:	55mRL
11	Topography of Mine	:	almost flat land with hillocks
12	Explosive Requirement	:	21.26 MT/Kg
13	Diesel/Fuel requirement	:	440 Litres per day

Production Details

Year	Production of Stone in Cum	Production of Stone in Tonnes	Overburden in cum	Intercalated waste in Cum	Total Waste in Cum
1st	63726	172060	27477	3354	30831
2nd	64094	173053	0	3373	3373

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3rd	64339	173715	0	3386	3386
4th	64829	175038	0	3412	3412
5th	64584	174376	16899	3399	20298
Total	321571	868242	44376	16925	61301

Land Use

Land Utilization	Existing Land use(Ha)	At the end of plan period (Ha)	At Conceptual period (Ha)
Excavation	0.0	1.835 (0.116ha area shall be backfilled, 0.930ha converted in to water reservoir & 0.789ha shall be left as dead benches)	1.835 (0.116ha area shall be backfilled, 0.930ha converted in to water reservoir & 0.789ha shall be left as dead benches)
Waste Dump	0.00	0.00 (waste dump to be removed and backfilled)	Nil (waste dump to be removed and backfilled)
Road	0.0	0.0 (comes under quarry)	0.0
Infrastructure (Crusher)	0.0	0.0	0.0
Safety Zone Plantation	0.0	0.528	0.528
Total	0.00	2.363	2.363
Unused Area	2.363	0.00	0.00
Total Lease Area	2.363		

ENVIRONMENT MANAGEMENT

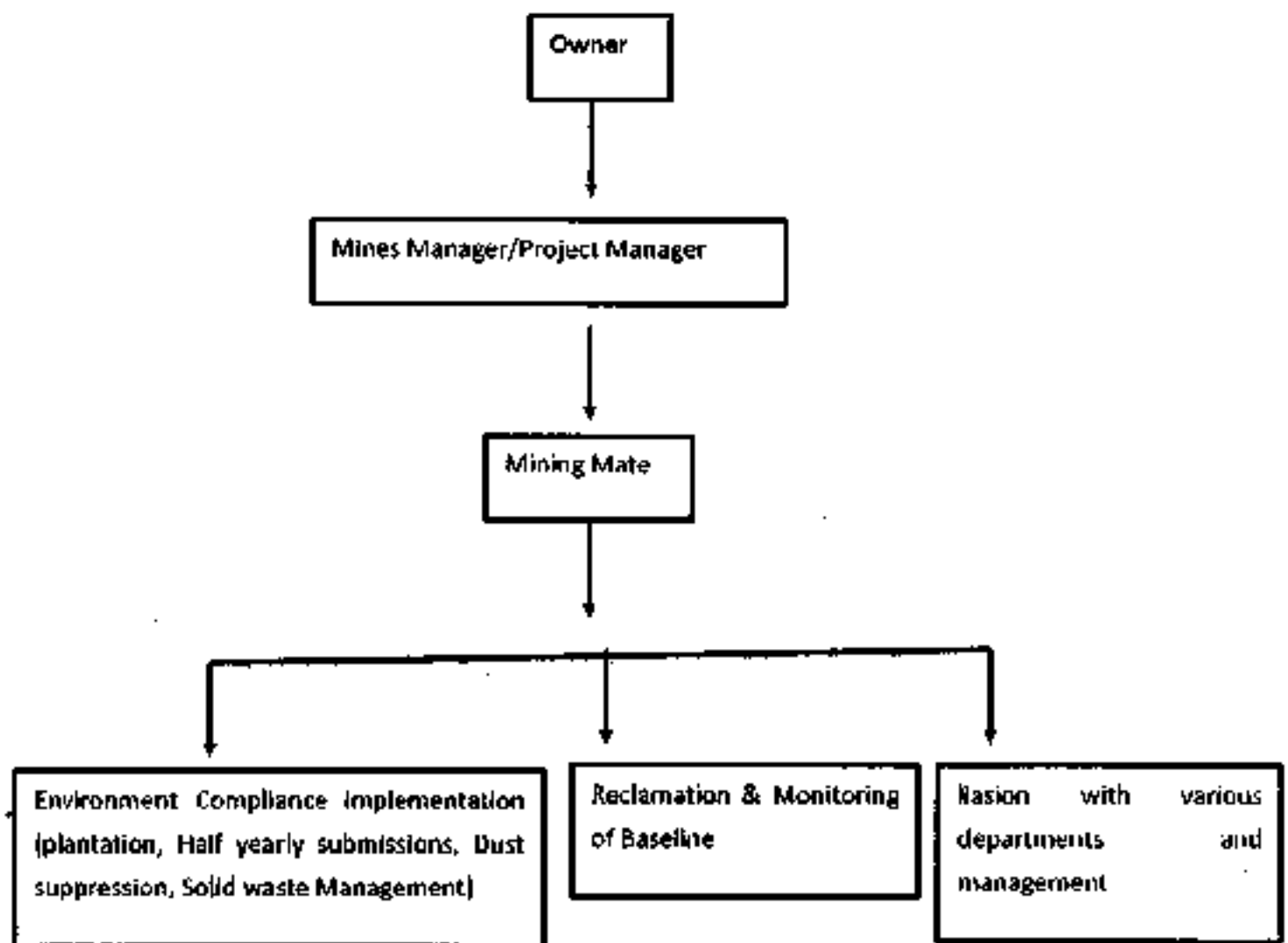
Green Belt Development

Year	Place of Plantation	Spacing b/w plants	Total No. of Plants	Area Cover in Square Meters	Total Area in Ha.	Species
1st	Safety Zone	2.5 x 2.5	845	8280	0.828	Gulmohar, Gular, Sagwan, Sakua <u>Fruit Bearing Trees</u> Mango, Jackfruit, Guava
	Haul Road	3.0 x 3.0	93	70M Approach Road 70/3=23Plants 100x4row=93Plant		
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care &	---	---	---	---	

5th	Protection Care & Protection	---	---	---	---	
Total			938	8280	0.82	

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Cell



Function of Environment Management Cell

- Supervision: Managed by Mines Manager with a qualified technical team.
- Personnel: Includes skilled, semi skilled, unskilled, and other third parties.

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☐ Responsibilities:

- ✓ Implement environmental control measures.
- ✓ Oversee reclamation planning and management.
- ✓ Manage air and water pollution control.
- ✓ Liaise with state and central statutory agencies.
- ✓ Develop greenbelt areas.

☐ Performance Review: Assess corporate environmental performance and report non-compliances.

☐ Remedial Actions: Suggest and implement actions for exceeding pollution limits.

☐ Coordination:

Collect health statistics for workers and local population.

Act as a bridge for project implementation and Project Authorities

Facilitate afforestation efforts.

Environment Management Budget

PROPOSED FOR ENVIRONMENT MANAGEMENT COST						
S. No.	Mitigative measures to protect Environment	Criteria Pollutants	Capital Cost (in Lakh)	Recurring cost (in Lakh)	Implementation Responsibility	Frequency and Method
1.	Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine) One Water Tanker	Dust (PM 10 & PM 2.5)	32	2.4	Mining Mate supervised by Mine Manager	Daily Basis/Requirement Basis Register/Log book
	Solid waste management	Municipal Solid by workers	0.71	0.1		Record maintain & coordination with vendors
2.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @No.	No2, So2 & CO reduction Noise reduction	4.69	2.0	Mining Mate supervised by Mine Manager	Care taking @ twice a week, Tree Inventory,

	of plants 938 x 500Rs.					
<u>3.</u>	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	Deviation in Baseline	NH	0.50	Out source to NABL Accredited Lab- Monitored by Mine Manager	Mine Manager Review of base line as per monitoring plan proposed
	TOTAL		37.4	5.0		

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

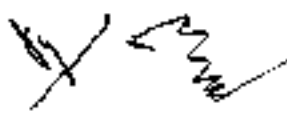
S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx In the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- The Boundary Pillars of the proposed mine lease area will be maintained properly.
- One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.







- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Solid Waste Management

The waste encountered during the mining operation is mainly. During Plan period gritty soil removed will be dumped at northern side with suitable precaution. Some quantity of the removed gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

i. Use of Sharp Drill Bits

ii. Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

iii. Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced.
- Optimum quantity of explosives would be used.

- Blasting to be done during favourable weather conditions.
- iv. **Operation of Diesel Equipment's** – They generate Noxious gases. It will be ensured that all mining machines & transport vehicles would be repaired & maintained regularly.
- v. **Loading of Product on Truck** – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.
- vi. **Movement of Trucks on Road** – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken:
- Regular water sprinkling on Haul road by using water Tankers.
 - Regular repair of Haul road.
 - All Trucks carrying stone outside lease area will have PUC certificate

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard Identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be

workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

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The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to over charging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

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Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonator shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers

- **Overtuning vehicles**

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks /tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any in coming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Paharpur Stone Deposit of Partner : Shri Arun Kumar Sah & Shri Lal Babu Ansari, Village : Paharpur, Anchal : Shikaripara, Distt.: Dumka, Jharkhand (2.363 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nlc.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines

owner of the respective leases to complete the plantation and maintenance in a time bound manner.

- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests. Summary findings of same to be submitted along with 6 monthly compliance
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC

7. Suraidih Stone Mine of M/s K.R.S. Shakti Mining and Construction Pvt. Ltd., Village : Suraidih, Thana no. : 66, Thana : Hiranpur, Distt.: Pakur, Jharkhand (2.563 Ha).

(Proposal no.: SIA/JH/ MIN /501944 /2024)

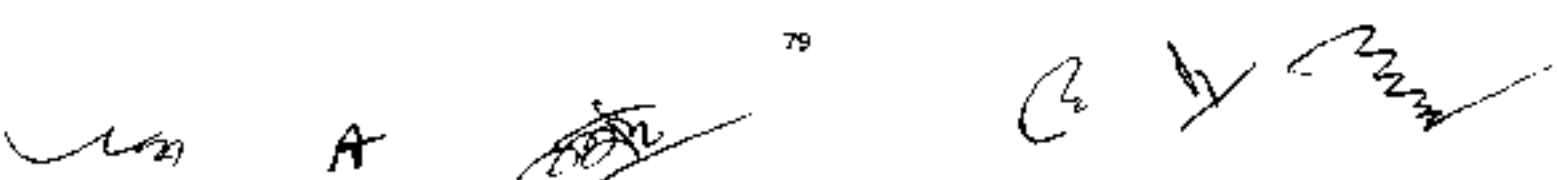
Name of the consultant :Oceao-Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.

This is a new project which has been taken for appraisal on 22.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Terms of Reference (ToR) as per EIA notification, 2006.

EC Application for: Proposed Capacity:72,468.00 Cum per Year/1,95,663.60 tonnes per Year or 241.56 Cum per day/652.21 Tonnes Per day.



Project and Location Details:

S. No	Parameter	Details												
1	Project Name	M/s K.R.S. Shakti Mining and Construction Pvt. Ltd												
2	Lessee/ Director	Shri Kanchan Yadav, Shri Ram Prakash & Shri Sanjay Kumar Yadav.												
3	Lessee Address	R/o- Gram- Nagawa, Thana-Chatra, District- Chatra, Jharkhand-825401.												
4	Lease Area	Ha: 2.563 Ha Acres: 6.33 Acres												
5	Type of Land	Raiyati Land												
6	Project Cost	42 Lakhs												
7	EMP Budget	Capital: 27,14,900 Recurring: 8,50,440												
8	New or Expansion	New												
9	Mineable Reserves	6,74,064 Cum 18,19,972Tonnes												
10	Mine Life	10.0 Years												
11	Man power	30 persons												
12	Water Requirement	Total water requirement is about 10.90 KLD=0.90 KLD (Drinking & Domestic Uses) + 5.0 (Plantation) KLD + 5.0 KLD (Dust Suppression).												
13	Water Source	by Authorised hired water tankers												
14	DG Set / power	125 KVA (Temporary setup for Backup)												
15	Crusher	No												
16	Nearst Water Body	Ranipur River is About 2.61 Km in SW Direction.												
17	Nearst Habitation	Belpahari is about 0.52 km in WNW direction.												
18	Nearst Rail Station	Kotal Pakur Railway Station is about 8.93 Km in ENE direction.												
19	Nearst Airport	Deoghar Airport is about 108.4 Km in ENE direction.												
20	Nearst Forest	<table border="1"> <tr> <td>DHANGHARA P.F.</td><td>8.24</td><td>S</td></tr> <tr> <td>DHARNIPAHAR P.F.</td><td>12.81</td><td>S</td></tr> <tr> <td>TAGUTOLA P.F.</td><td>11.13</td><td>SW</td></tr> <tr> <td>GANROPAHARI FOREST</td><td>13.18</td><td>SW</td></tr> </table>	DHANGHARA P.F.	8.24	S	DHARNIPAHAR P.F.	12.81	S	TAGUTOLA P.F.	11.13	SW	GANROPAHARI FOREST	13.18	SW
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DHARNIPAHAR P.F.	12.81	S												
TAGUTOLA P.F.	11.13	SW												
GANROPAHARI FOREST	13.18	SW												
21	Road & Highways	HIRANPUR-133A ROAD DUMKA SAMEBGANJ ROAD 333A -PAKUR DHUMKA ROAD HIRANPUR KHAS ROAD THANA ROAD												

CO-ORDINATES

PILLARS	LATITUDE	LONGITUDE	NORTHING	EASTING
1	24° 42' 1.177" N	87° 44' 50.570" E	2731972.084	575601.2518
2	24°41'59.884" N	87° 44' 50.304" E	2731932.271	575593.9854
3	24°41' 58.502"N	87° 44' 50.312" E	2731889.786	575594.4614

4	24° 41' 57.290" N	87° 44' 50.333" E	2731852.507	575595.2386
5	24° 41' 55.926" N	87° 44' 49.887" E	2731810.493	575582.9505
6	24° 41' 54.738" N	87° 44' 49.109" E	2731773.827	575561.283
7	24° 41' 55.332" N	87° 44' 47.285" E	2731791.799	575509.9252
8	24° 41' 55.759" N	87° 44' 45.970" E	2731804.755	575472.9024
9	24° 41' 56.275" N	87° 44' 44.174" E	2731820.343	575422.3533
10	24° 41' 57.407" N	87° 44' 44.643" E	2731855.233	575435.3444
11	24° 41' 58.502" N	87° 44' 45.140" E	2731888.995	575449.1323
12	24° 41' 59.836" N	87° 44' 45.552" E	2731930.081	575460.487
13	24° 42' 0.975" N	87° 44' 45.972" E	2731965.188	575472.0908
14	24° 42' 0.611" N	87° 44' 47.378" E	2731954.199	575511.664
15	24° 42' 1.830" N	87° 44' 47.717" E	2731991.757	575520.9777
16	24° 42' 1.486" N	87° 44' 49.222" E	2731981.379	575563.3247

LAND DETAILS

Khata no.	Plot no.
26	202 (P), 203, 204, 205 (P), 208 (P), 312 (P), 204/491 & 206/492

STATUTORY CLEARANCES

1	LOI / Lease docs	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 1610/M, dated 26.09.2024.
2	CO	The CO, Hiranpur vide letter no. 474/Ra., dated 27.08.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	DMO, Pakur vide memo no. 1768/M, dated 17.10.2024 certified that O3LoI (5.45 Acre, 6.94 Acre & 30.02 Acre) exists within 500 meters radius from proposed project site and total area is 48.74 Acre or 19.72 Ha.
4	DFO Wild Life	DFO -cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2385, dated 27.09.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	Division Forest Officer, Pakur Forest Division vide letter no. 1512, dated 03.09.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	The DMO, Pakur has been certified vide memo no. 1769/M, dated 17.10.2024 that this project is mentioned in approved DSR of

		Pakur District as a potential area (Sl. no. 42, Page no. 119).
7	Gram Sabha	BDO, Hiranpur vide letter dated 29.08.2024 informed that Gram Sabha conducted on 23.08.2024.
8	Mine Plan Approval	Approved by District Mining Officer, Pakur vide Memo No. 1808/M. dated 18.10.2024.
9	Qualified Person	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	DCM & Semi-Mechanised	
2	Lease Area	:	6.33 ACRES / 2.563-HA	Life of Mine – 10.0 years
3	Waste Generation	:	5 years– 35916.00	
4	Stripping Ratio(t/m ³)	:	1:0.03	
5	Working Days	:	300	
6	Bench: size & No	:	6m x 6m	
7	Highest Elevation of lease Area	:	64 above MSL	
8	Lowest Elevation of lease Area	:	59 above MSL	
9	Ultimate Working Depth	:	40 above MSL	
10	Water Table	:	08 above MSL	
11	Topography of Mine	:	almost flat land with hillocks	
12	Explosive Requirement	:	162.85Kg/Day	
13	Diesel/Fuel requirement	:	440 Litres per day	

Production Details

Year	Generation of Waste/O. B in cum	Production of Stone in Cum	Production of Stone in Tonnes	Grade/Uses
1st	35916.00	36326.00	186021.90	Construction & Road
2nd	0.00	65846.00	177784.20	Construction & Road
3rd	0.00	70050.00	189135.00	Construction & Road
4th	0.00	67498.00	182244.60	Construction & Road
5th	0.00	72468.00	195663.60	Construction & Road
Total	35916.00	312188.00	930849.30	
Maximum production proposed in- 35916.00 Cum/9,30,849 Ton				
Stripping Ratio in (t/m ³)- 1:0.03				

Land Use

Land Utilization	Existing Land use(Ha)	At the end of plan period (Ha)	At Conceptual period (Ha)
Quarry	0.00	1.730	2.07(converted into water reservoir)
Haul Road	0.00	0.030	0.00
Proposed Crusher	0.00	0.00	0.00
Green belt in Safety Barrier	0.00	0.49	0.49
Dump with Parapet wall & Garland drain	0.00	0.20	Top soil will be used for plantation in first year and rest OB will be used road dressing and Backfilling
Total area in use	0.00	2.45	2.56
Balance unused area	2.56	0.11	0.00
Balance used area	0.00	0.00	0.00
Total Applied Lease Area	2.56	2.56	2.56

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Place of Plantation	Spacing b/w plants	Total No. of Plants	Area Cover in Square Meters	Total Area in Ha.	Species
1st	Safety Zone	2.5 x 2.5	784	4900	0.49	Gulmohar, Gular, Sagwan, Sakua <u>Fruit Bearing Trees</u> Mango, Jackfruit, Guava
	Haul Road	3 x 3	932	700M Approach Road $700/3=233\text{Plants}$ $233 \times 4\text{row}=932\text{Plant}$	—	
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			1716	4900	0.49	

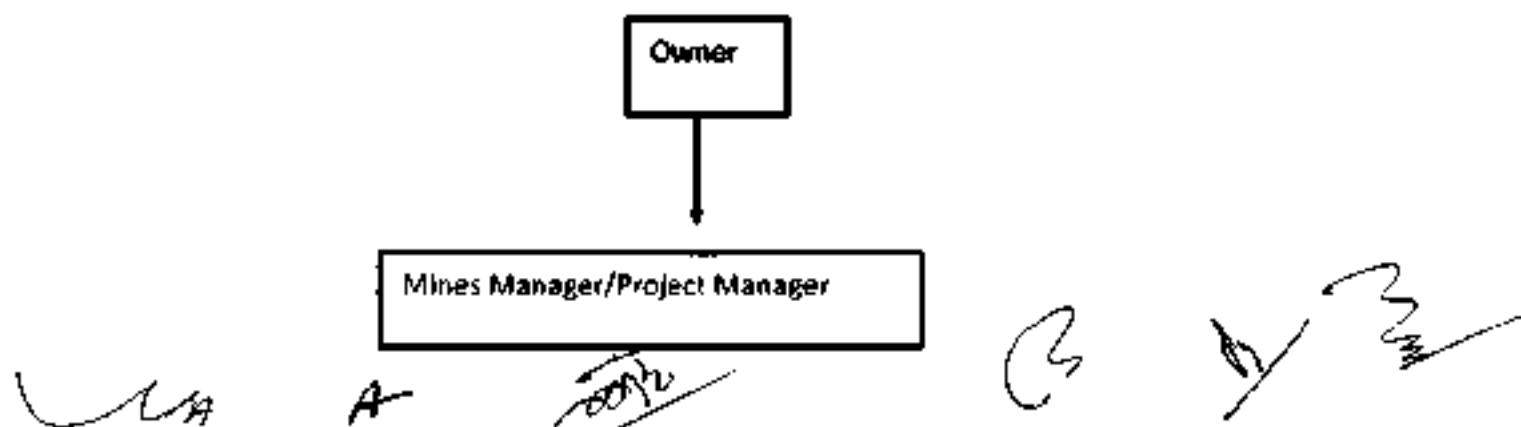
- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable

species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Budget

S.NO.	Particulars	Budget Provisions (Rs)	
		Capital	Recurring
Water Demand			
1(a)	Fixed Overhead water sprinkling system with solar pump for outgoing and incoming transportation vehicles for haul road and green belt Cost for 300 days for 10 KLD @5 KL tanker capacity, Rupees 500/- per tanker	1,00,000	3,00,000
	& One dedicated tanker of 5 KL for Greenbelt Management	10,00,000	50,000
1(b)	Discharge of waste water 300 days for 0.72 KLD @5 KL tanker capacity, Rupees 2000/per tanker	0	86,400
2	Prepare & Maintenance of approach road (Max. Road length 700 m, Width 4.0 m) @ 500Rs. /Meter.	3,50,000	35,000
3	Monitoring (Air, Water, Soil & Noise)	Nil	1,00,000
4	Settling tank 2 in no's (LBH 12 m* 7 m* 4 m) & Garland drains	2,00,000	30,000
5	Wire Fence 668 m x 300 /— meter	2,00,400	20,040
Plantation Scheme			
Plantation in consultation with DFO & Gram Panchayat and conversion to Grazing land as far as possible.			
6	Green belt development safety zone 7.5mtr and along the road (for each plants including hedges and fences) 1716 No. of plants x 500 Rs.	8,58,000	2,00,000
Solid Waste Management			
7	Bins 2 Nos.	1,500	4,000
8	Transport of Dry Waste	5,000	
9	Vehicle Maintenance +PUC Certification	Nil	25,000
Total EMP Budget		27,14,900	8,50,440

Environment Monitoring Cell



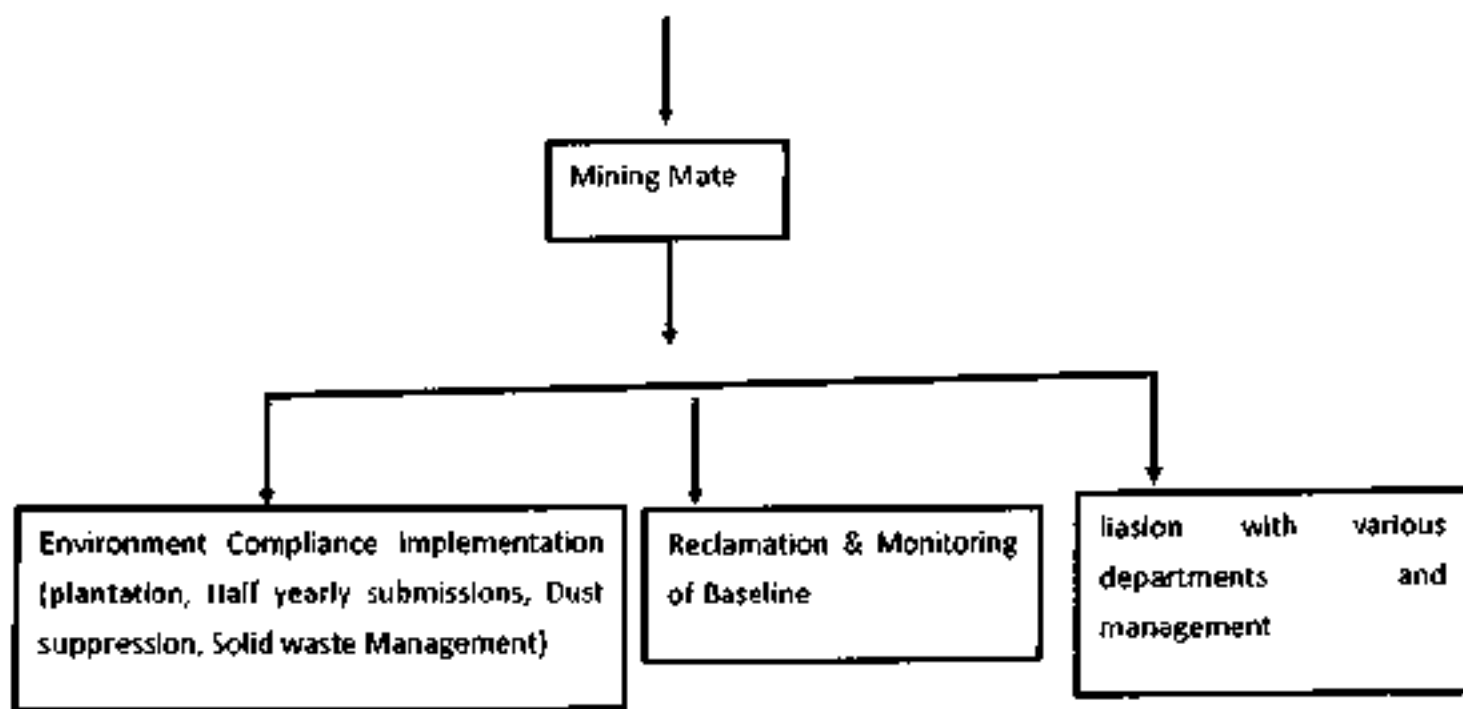


Fig: Organization Chart for Environment Management Cell

Responsibility of Environment Management cell

- **Supervision:** Managed by Mines Manager with a qualified technical team.
- **Personnel:** Includes skilled, semi-skilled, unskilled, and other third parties.
- **Responsibilities:**
 - ✓ Implement environmental control measures.
 - ✓ Oversee reclamation planning and management.
 - ✓ Manage air and water pollution control.
 - ✓ Liaise with state and central statutory agencies.
 - ✓ Develop greenbelt areas.
- **Performance Review:** Assess corporate environmental performance and report non-compliances.
- **Remedial Actions:** Suggest and implement actions for exceeding pollution limits.
- **Coordination:**

Collect health statistics for workers and local population.

Act as a bridge for project implementation and Project Authorities

Facilitate afforestation efforts.

Environmental Monitoring period: 15 Oct 2024 to 15 Jan 2025

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Baseline Monitoring Location

AIR MONITORING LOCATIONS

S. No.	Particulars	Distance (KM)	Direction	Land use	Latitude	Longitude
AAQ1	On site	-	-	Project site	24°42'0.58"N	87°44'49.92"E
AAQ2	Other Mine Site	1.49	ESE	Industrial Site	24°41'45.44"N	87°45'40.31"E
AAQ3	Government Middle School, Tarapur	1.52	W	Residential Area	24°42'0.20"N	87°43'53.02"E
AAQ4	UMS Partappur School	2.18	ENE	Silent Zone	24°42'10.47"N	87°46'3.68"E
AAQ5	Bajrangbali Mandir Murgadanga	2.62	SE	Silent Zone	24°40'54.62"N	87°45'48.37"E
AAQ6	UMS Maharo School - School	2.23	NNE	Residential Area	24°42'55.99"N	87°45'36.95"E
AAQ7	HP gas godaawn Petrol Pump	4.76	S	Residential Area	24°39'24.14"N	87°45'11.99"E
AAQ8	Bajrangbali mandir. (Hathkathi)	3.27	WNW	Silent Zone	24°42'21.30"N	87°42'53.31"E

NOISE MONITORING LOCATIONS

S. No.	Particulars	Distance (KM)	Direction	Landuse	Latitude	Longitude
NQ1	On site	-	-	Project site	24°42'0.58"N	87°44'49.92"E
NQ2	Other Mine Site	1.49	ESE	Industrial Site	24°41'45.44"N	87°45'40.31"E
NQ3	Government Middle School, Tarapur	1.52	W	Residential Area	24°42'0.20"N	87°43'53.02"E
NQ4	UMS Partappur School	2.18	ENE	Silent Zone	24°42'10.47"N	87°46'3.68"E
NQ5	Bajrangbali Mandir Murgadanga	2.62	SE	Silent Zone	24°40'54.62"N	87°45'48.37"E

SOIL MONITORING LOCATIONS

S. No.	Particulars	Distance (KM)	Direction	Landuse	Latitude	Longitude
SQ1	On site	-	-	Project site	24°42'0.58"N	87°44'49.92"E
SQ2	Other Mine Site	1.49	ESE	Industrial Site	24°41'45.44"N	87°45'40.31"E
SQ3	Government Middle School, Tarapur	1.52	W	Residential Area	24°42'0.20"N	87°43'53.02"E
SQ4	UMS Partappur School	2.18	ENE	Silent Zone	24°42'10.47"N	87°46'3.68"E

SQ5	Bajrangball Mandir Murgadanga	2.62	SE	Silent Zone	24°40'54.62"N	87°45'48.37"E
GROUND WATER MONITORING LOCATIONS						
S. No.	Particulars	Distance (KM)	Direction	Landuse	Latitude	Longitude
GWQ1	Government Middle School, Tarapur	1.52	W	Residential Area	24°42'0.20"N	87°43'53.02"E
GWQ2	UMS Partappur School	2.18	ENE	Silent Zone	24°42'10.47"N	87°46'3.68"E
GWQ3	Bajrangball Mandir Murgadanga	2.62	SE	Silent Zone	24°40'54.62"N	87°45'48.37"E
SURFACE WATER MONITORING LOCATIONS						
S. No.	Particulars	Distance (KM)	Direction	Landuse	Latitude	Longitude
SWQ1	River nearby Mohanpur Village (upstream)	2.72	W		24°41'25.40"N	87°43'18.41"E
SWQ2	River nearby Mohanpur Village (downstream)	3.31	S		24°40'7.74"N	87°44'35.70"E

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx in the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use

- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Solid Waste Management

The waste encountered during the mining operation is mainly. During Plan period gritty soil removed will be dumped at northern side with suitable precaution. Some quantity of the removed gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible.

Water Quality Management

- Mining will be confined to above Ground Water table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

i. **Use of Sharp Drill Bits**

ii. **Wet Drilling** – Water will be sprinkled on the site where drilling has to be done.

iii. **Blasting** – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced.
- Optimum quantity of explosives would be used.
- Blasting to be done during favourable weather conditions.

iv. **Operation of Diesel Equipment's** – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

v. **Loading of Product on Truck** – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

vi. **Movement of Trucks on Road** – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken:

- Regular water sprinkling on Gaur road by using water Tankers.
- Regular repair of Haul road.
- All Trucks carrying stone outside lease area will have PUC certificate

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard Identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hlt by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20

7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the Following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.

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- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to over charging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.

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- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonators shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

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Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks /tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any in coming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 22, 23, 24, 25 & 26.10.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for

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Issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure

• It alongwith following specific condition :-

1. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Mo Ke Noom" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).

8. Mansinghpur Stone Mine of M/s L.S.G. Mining Pvt. Ltd., Village : Mansinghpur, Thana no. : 103, Anchal : Hiranpur, Distt.: Pakur, Jharkhand (2.567 Ha).

{Proposal no.: SIA/JH/MIN/ 501982 /2024}

Name of the consultant :Oceao-Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.

This is a new project which has been taken for appraisal on 22.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Terms of Reference (ToR) as per EIA notification, 2006.

EC Application for: Proposed Capacity: 48,720 Cum per Year/1,315,44 tonnes per Year or 162.4 Cum per day/438.48 Tonnes Per day.

Project and Location Details:

S. No	Parameter	Details
1	Project Name	"Mansinghpur Stone Mine" By M/s LSG Mining Private Limited
2	Lessee/Director	Shri Rajeebul Shaikh
3	Lessee Address	Village- Bari Aliganj, P.O.+ P.S.+ District- Pakur, Jharkhand
4	Lease Area	2.567 Ha Acres: 6.34 Acres
5	Type of Land	Raiyati Land
6	Project Cost	42 Lakhs
7	EMP Budget	Capital: 27.95Lakhs Recurring: 4.5 Lakhs / year
8	New or Expansion	New
9	Mineable Reserves	340582.00Cum 919571.40Tonnes
10	Mine Life	07 Years
11	Man power	22 persons

12	Water Requirement	:	Total water requirement is about 7.66 KLD= 0.66 (Drinking Water & Domestic Uses) + 3 KLD (Water sprinkling) + 4 KLD (plantation).		
13	Water Source	:	by Authorised hired water tankers		
14	DG Set / power	:	125 KVA (Temporary setup for Backup)		
15	Crusher	:	Not Proposed		
16	Nearest Water Body	:	Ganeshpur Pond is about 0.64km in SE direction.		
17	Nearest Habitation	:	Mansinghpur is about 0.17 km in ESE direction		
18	Nearest Rail Station	:	Pakur Railway Station is about 9.21 Km in E direction. Kotalpukur Railway Station is about 6.62 Km in NE direction.		
19	Nearest Airport	:	Deoghar Airport is about 112.04 Km in WSW direction.		
20	Nearest Forest	:	Balidurpur Forest	9.39	NE
		:	Bagdabra Shal Forest	8.4	NE
		:	Gohalbari PF	10.51	NW
		:	Dharnipahar PF	12.43	SSW
		:	Bhandaro PF	5.33	NW
21	Road & Highways	:	NH-133A is about 4.21 km in WSW direction.		

CO-ORDINATES

S. No.	Latitude	Longitude
1	24° 41' 24.435" N	87° 46' 59.644" E
2	24° 41' 25.043" N	87° 46' 59.062" E
3	24° 41' 25.587" N	87° 46' 59.001" E
4	24° 41' 26.205" N	87° 46' 58.144" E
5	24° 41' 26.475" N	87° 46' 57.060" E
6	24° 41' 25.683" N	87° 46' 56.560" E
7	24° 41' 25.350" N	87° 46' 55.590" E
8	24° 41' 24.432" N	87° 46' 53.580" E
9	24° 41' 23.167" N	87° 46' 51.757" E
10	24° 41' 22.850" N	87° 46' 50.328" E
11	24° 41' 21.968" N	87° 46' 50.480" E
12	24° 41' 21.174" N	87° 46' 50.804" E
13	24° 41' 20.145" N	87° 46' 50.595" E
14	24° 41' 19.931" N	87° 46' 51.294" E
15	24° 41' 20.019" N	87° 46' 51.824" E
16	24° 41' 20.337" N	87° 46' 52.017" E
17	24° 41' 20.181" N	87° 46' 52.436" E
18	24° 41' 20.876" N	87° 46' 54.189" E
19	24° 41' 21.803" N	87° 46' 55.760" E
20	24° 41' 23.310" N	87° 46' 57.750" E
21	24° 41' 23.149" N	87° 46' 58.008" E
22	24° 41' 23.444" N	87° 46' 58.438" E
23	24° 41' 22.916" N	87° 46' 59.201" E
24	24° 41' 23.691" N	87° 46' 59.425" E

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LAND DETAILS

Khata no.	Plot no.
04	626, 678 & 679 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 1656/M, dated 28.09.2024.
2	CO	The CO, Hiranpur vide letter no. 46/Ra., dated 31.01.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhar" in R.S. Khatyan & Register II.
3	DMO	DMO, Pakur vide memo no. 1710/M, dated 09.10.2024 certified that 02 LoI (3.84 Acre & 6.13 Acre) exists within 500 meters radius from proposed project site and total area is 16.31 Acre nr 6.60 Ha.
4	DFO Wild Life	DFO -cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 287, dated 07.02.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	Division Forest Officer, Pakur Forest Division vide letter no. 295, dated 15.02.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	The DMO, Pakur has been certified vide memo no. 1711/M, dated 09.10.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (SI no. 45, Page no 119)
7	Gram Sabha	BDO, Hiranpur vide letter no. 146/VI. Dated 07.02.2024 informed that Gram Sabha conducted on 05.02.2024.
8	Mine Plan Approval	Approved by District Mining Officer, Pakur vide Memo No. 1783/M, dated 17.10.2024.
9	Qualified Person	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	OCM & Semi-Mechanised	
2	Lease Area	:	6.34 ACRES / 2.567 HIA	Life of Mine – 07 years
3	Waste Generation	:	5 years– 43700	
4	Stripping Ratio(t/m ³)	:	1:0.06	

5	Working Days	:	300
6	Bench: size & No	:	6m x 6m
7	Highest Elevation of lease Area	:	44Amsl
8	Lowest Elevation of lease Area	:	42Amsl
9	Ultimate Working Depth	:	14Amsl
10	Water Table	:	09Amsl
11	Topography of Mine	:	Undulating Topography
12	Explosive Requirement	:	109.70Kg/Day
13	Diesel/Fuel requirement	:	440 Litres per day

Production Details

Year	Generation of Waste/O. B in cum	Production of Stone in Cum	Production of Stone in Tonnes	Grade/Uses
1st	23300.00	47900.00	129330.00	Construction & Road
2nd	0	48500.00	130950.00	
3rd	20400.00	48520.00	131004.00	
4th	0	48720.00	131544.00	
5th	0	46000.00	124200.00	
Total	43700	239640	647028	
Maximum production proposed in- 48700Cum/647028Ton				
Stripping Ratio in (t/m³)- 1:0.06				

Land Use

LAND USE PATTERN			
	Existing	First to Fifth Years	After Life of Mine
Category	Area in Hectares	Area in Hectares	Area in Hectares
Quarry	0.00	1.450	1.99(0.30ha Backfilled, 1.69 converted in to water reservoir)
Haul Road	0.00	0.038	0.00
Proposed Crusher	0.00	0.00	0.00
Green belt in Safety Barrier	0.00	0.577	0.577
Dump with Parapet wall &	0.00	0.160	Top soil will be used for plantation in first year

Garland drain			and rest OB will be used road dressing and Backfilling
Total area in use	0.00	2.225	2.567
Balance unused area	2.567	0.342	0.00
Balance used area	0.00	0.00	0.00
Total Applied Lease Area	2.567	2.567	2.567

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Place of Plantation	Spacing & b/w plants	Total No. of Plants	Area Cover in Square Meters	Total Area in Ha.	Species
1st	Safety Zone	2.5 x 2.5	932	5770	0.577	Gulmohar Gular, Sagwan, Sakua <u>Fruit Bearing Trees</u> Mango, Jackfruit, Guava
	Haul Road	3 x 3	1068	800M Approach Road $800/3=267$ Plants $100 \times 4 \text{ row} = 1068$ Plant		
2nd	Care & Protectio n	---	---	---	---	
3rd	Care & Protectio n	---	---	---	---	
4th	Care & Protectio n	---	---	---	---	
5th	Care & Protectio n	---	---	---	---	
Total			2000	5770	0.577	

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

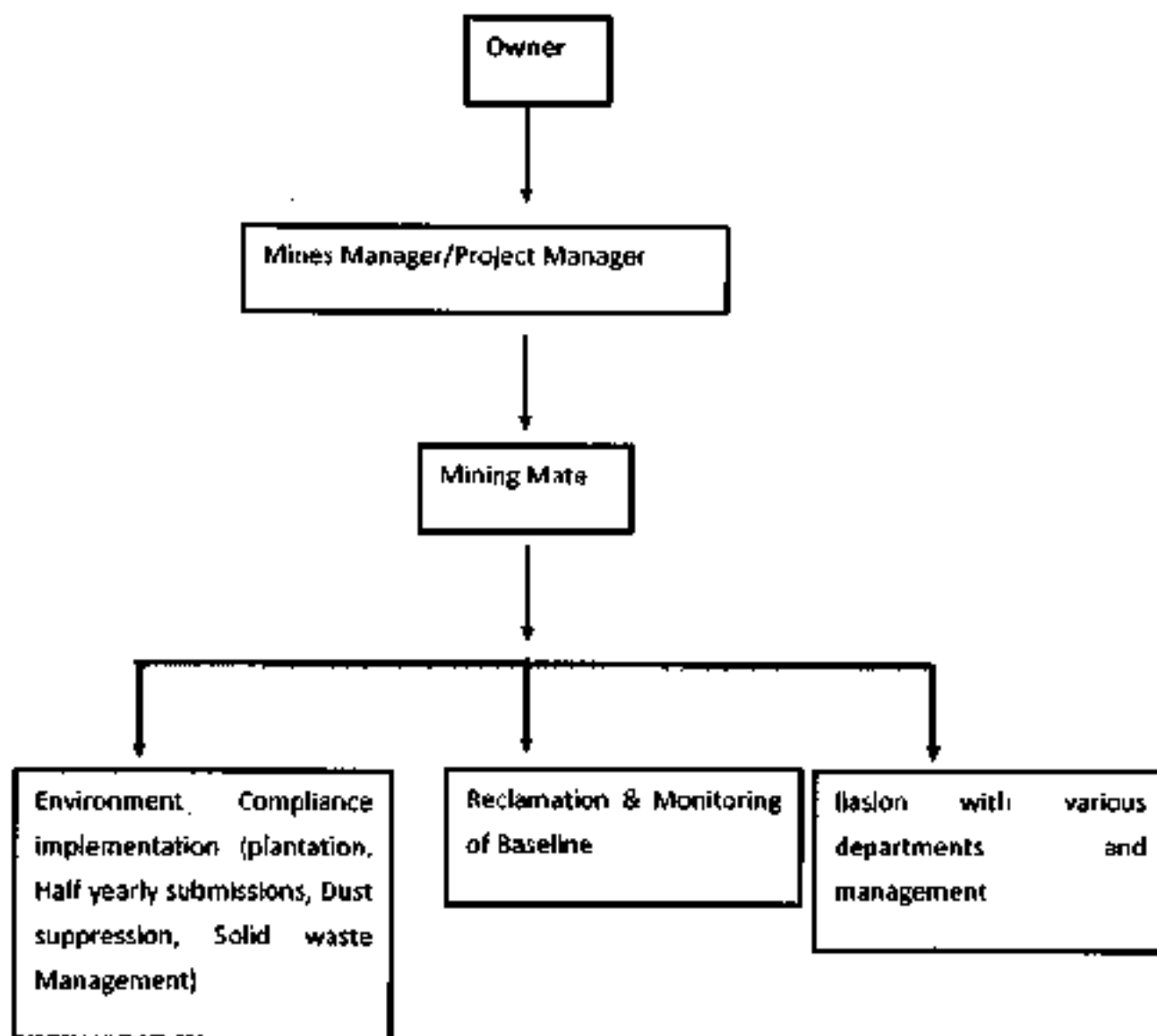
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Environment Management Budget

S.NO.	Particulars		
		Capital	Recurring
Water Demand			
1(a)	Fixed Overhead water sprinkling system with solar pump for outgoing and incoming transportation vehicles for haul road and green belt Cost for 300 days for 7 KLD @5 KL tanker capacity, Rupees 500/- per tanker	1,00,000	2,10,000
	& One dedicated tanker of 5 KL for Greenbelt Management	10,00,000	50,000
1(b)	Discharge of waste water 300 days for 0.52 KLD @5 KL tanker capacity, Rupees 2000/per tanker	0	62,400
2	Prepare & Maintenance of approach road (Max. Road length 800 m, Width 4.0 m) @ 500Rs./Meter.	4,00,000	40,000
3	Monitoring (Air, Water, Soil & Noise)	Nil	1,00,000
4	Settling tank 2 in no's (LBH 12 m* 7 m* 4 m) & Garland drains	2,00,000	30,000
5	Wire Fence 800 m x 300 /- meter	2,40,000	24,000
Plantation Scheme			
Plantation in consultation with DFO & Gram Panchayat and conversion to Grazing land as far as possible.			
6	Green belt development safety zone 7.5mtr and along the road (for each plants including hedges and fences) 2000 No. of plants x 500 Rs.	10,00,000	2,00,000
Solid Waste Management			
7	Bins 2 Nos.	1,500	4,000
8	Transport of Dry Waste	5,000	

9	Vehicle Maintenance +PUC Certification	Nil	25,000
Total EMP Budget		29,46,500	7,45,400

Environment Management Cell



Organization Chart for Environment Management Cell

Environmental Management Cell Responsibility

- Supervision: Managed by Mines Manager with a qualified technical team.
- Personnel: Includes skilled, semi-skilled, unskilled, and other third parties.
- Responsibilities:
 - ✓ Implement environmental control measures.
 - ✓ Oversee reclamation planning and management.
 - ✓ Manage air and water pollution control.

- ✓ Liaise with state and central statutory agencies.
- ✓ Develop greenbelt areas.
- Performance Review: Assess corporate environmental performance and report non-compliances.
- Remedial Actions: Suggest and implement actions for exceeding pollution limits
- Coordination:

Collect health statistics for workers and local population.

Act as a bridge for project implementation and Project Authorities

Facilitate afforestation efforts.

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx in the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring. Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.

- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Solid Waste Management

The waste encountered during the mining operation is mainly. During Plan period gritty soil removed will be dumped at northern side with suitable precaution. Some quantity of the removed gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

i. Use of Sharp Drill Bits

ii. Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

iii. Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced.
- Optimum quantity of explosives would be used
- Blasting to be done during favourable weather conditions.

iv. Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

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Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
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- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to over charging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.

- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonators shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure

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- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks /tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any in coming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 22, 23, 24, 25 & 26.10.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III along with following specific condition :-

1. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked

green belt area as the part of tree plantation campaign "Ek Ped Mo Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).

9. Dharsuri Stone Deposit of M/s Lutfal Stone & Granite, Village : Dharsuri, Anchal & Thana : Pakur, Distt.: Pakur, Jharkhand (1.857 Ha).

(Proposal no.: SIA/JH/MIN/ S02105 /2024)

Name of the consultant :Oceao-Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.

This is a new project which has been taken for appraisal on 22.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Terms of Reference (ToR) as per EIA notification, 2006.

EC Application for: Proposed Capacity: Annual production of stone is 83734 MT per year and Daily Production is 279 MT Per Day.

Project details and location :

S. No	Parameter	Details	
1	Project Name	Dharsuri Stone Deposi by M/s Lutfal Stone & Granite	
2	Director	Shri Rajeebul Shaikh	
3	Lessee Address	R/O- Bari Aliganj, District- Pakur, Jharkhand	
4	Lease Area	1.857 Ha	4.588 Acres
5	Type of Land	Raiyati Land	
6	Location of Mine Site	Village – Dharsuri, Anchal- Pakur, District- Pakur, Jharkhand	
		Khata No.	Plot No.
		57	1996/P
		10	2001
		09	1998/P, 1999/P, 2002, 2004
		53	2000/P, 2003
		56	2005/P, 2007

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		52	2006/P
7	Co-Ordinates with Topo sheet No.:	Toposheet no.: G45V14 Latitude: N 24°42' 17.498" to N 24°42' 26.565" Longitude: E 87°48' 44.933" to E 87°48' 49.704"	
8	Project Cost	35.00 (in Lakhs)	
9	EMP Budget	Capital: 24.93Lakhs	Recurring: 8.29Lakh / year
10	New or Expansion	New	
11	Minerals of mine	Boulder Stone	
12	production capacity of mine	Annum: 83734 MT PER YEAR Day: 279 TPD	
13	Method of mining	GROUP "A" OTFM	
14	Total Life of mine	07 Years	
15	Depth of mine	28 m	
17	Man power	16 person	
18	Crusher	Not Proposed	
19	No of working days	300 days	
20	Water demand	Total water requirement is about 13.56 KLD= 0.56 (Drinking Water & Domestic Uses) + 8 KLD (Water sprinkling) + 5 KLD (plantation).	
21	Sources of water	by Authorised hired water tankers	
24	Nearest railway station	Kotalpukur Railway Station is about 3.6 Km.	
26	Nearest State Highway/ Nearest National Highway	NH-133A Pakur-Hiranpur Road is about 8 km in NE direction.	
27	Seismic zone	Zone III as per seismic zone map of India	

CO-ORDINATES

Latitude	Longitude
N 24°42' 17.498"	E 87°48' 44.933"
N 24°42' 26.565"	E 87°48' 49.704"

LAND DETAILS

Khata No.	Plot No.
57	1996/P
10	2001
09	1998/P, 1999/P, 2002, 2004
53	2000/P, 2003
56	2005/P, 2007
52	2006/P

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 1158/M. dated 25.07.2024.
2	CO	:	The CO, Pakur vide letter no. 1590/Ra., dated 20.12.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhar" in R.S. Khatyan & Register II and also mentioned that the habitation of 18 houses at a distance of 230 meters of proposed project site.
3	DMO	:	DMO, Pakur vide memo no. 1813/M, dated 19.10.2024 certified that 01 other mining lease area (5.22 Acre) and 02 LoI (4.682 Acre & 4.406 Acre) exists within 500 meters radius from proposed project site and total area is 18.896 Acre or 7.65 Ha.
4	DFO Wild Life	:	DFO -cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2857, dated 26.11.2022 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide letter no. 1574, dated 22.10.2022 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 1812/M, dated 19.10.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 17, Page no. 149).
7	Gram Sabha	:	BDO, Pakur vide letter no. 1390/Vl. Dated 03.09.2022 informed that Gram Sabha conducted on 01.09.2022.

8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 1751/M, dated 15.10.2024.
9	Qualified Person	:	Shri Vidya Bhushan Mishra vide letter dated 21.10.2024 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	OCM & Semi-Mechanised
2	Lease Area	:	4.588 ACRES / 1.857 HA
3	Waste Generation	:	Life of Mine - 05 years
4	Stripping Ratio(t/m ³)	:	5 years - 34349 Cum
5	Working Days	:	1:0.17
6	Bench: size & No	:	300
7	Highest Elevation of lease Area	:	6m x 6m
8	Lowest Elevation of lease Area	:	38AMSL
11	Topography of Mine	:	30AMSL
12	Explosive Requirement	:	almost flat land with hillocks
13	Diesel/Fuel requirement	:	42.53 kg
		:	324 Litres per day

Production Details

Year	Production of stone in Cum	Production of stone in Tonnes	Overburden in cum	Intercalated waste in Cum	Total Waste in Cum
1st	27360	73872	11360	1440	12800
2nd	28272	76334	8800	1488	10288
3rd	28880	77976	0	1520	1520
4th	30096	81259	0	1584	1584
5th	31013	83734	6525	1584	8157
Total	145621	393176	26685	7664	34349

Land Use

LAND USE PATTERN			
Category	Existing	First to Fifth Years	At Conceptual period (Ha)
	Area in Hectares	Area in Hectares	Area in Hectares
Excavation	0	0.920	1.350 (0.200ha area shall be Backfilled,0.799ha converted

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			in to water reservoir & 0.352ha shall be left as dead benches)
Waste Dump	0	0.250	0
Road	0	0.005	0
Infrastructure (Crusher)	0	0	0
Safety Zone Plantation	0	0.507	0.507
Total	0	1.682	1.857
Unused Area	1.857	0.175	0
Total Lease Area	1.857		

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Place of Plantation	Spacing b/w plants	Total No. of Plants	Area Cover in Square Meters	Total Area in Ha.	Species
1st	Safety Zone	2.5 x 2.5	88	7200	0.72	Gulmohar, Gular, Sagwan, Sakua <u>Fruit Bearing Trees</u> Mango, Jackfruit, Guava
	Haul Road	3 x 3	1066	800M Approach 266 Meter Approach Rd. Two row both side $266/3=266*4=1066$ Plants		
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			1154	7200	0.72	

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable

species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Budget

S.NO.	Particulars	Budget Provisions (Rs)	
		Capital	Recurring
Water Demand			
1(a)	Fixed Overhead water sprinkling system with solar pump for outgoing and incoming transportation vehicles for haul road and green belt Cost for 300 days for 7 KLD @5 KL tanker capacity, Rupees 500/- per tanker	1,00,000	3,90,000
	& One dedicated tanker of 5 KL for Greenbelt Management	10,00,000	50,000
1(b)	Discharge of waste water 300 days for 0.52 KLD @5 KL tanker capacity, Rupees 2000/per tanker	0	54,000
2	Prepare & Maintenance of approach road (Max. Road length 800 m, Width 4.0 m) @ 500Rs. /Meter.	4,00,000	40,000
3	Monitoring (Air, Water, Soil & Noise)	Nil	1,00,000
4	Settling tank 2 in no's (LBH 12 m* 7 m* 4 m) & Garland drains	2,00,000	30,000
5	Wire Fence 700 m x 300 /- meter	2,10,000	21,000
Plantation Scheme			
Plantation in consultation with DFO & Gram Panchayat and conversion to Grazing land as far as possible.			
6	Green belt development safety zone 7.5mtr and along the road (for each plants including hedges and fences) 1154 No. of plants x 500 Rs.	5,77,000	1,15,000
Solid Waste Management			
7	Bins 2 Nos.	1,500	4,000
8	Transport of Dry Waste	5,000	
9	Vehicle Maintenance +PUC Certification	Nil	25,000
Total EMP Budget		24,93,500	8,29,000

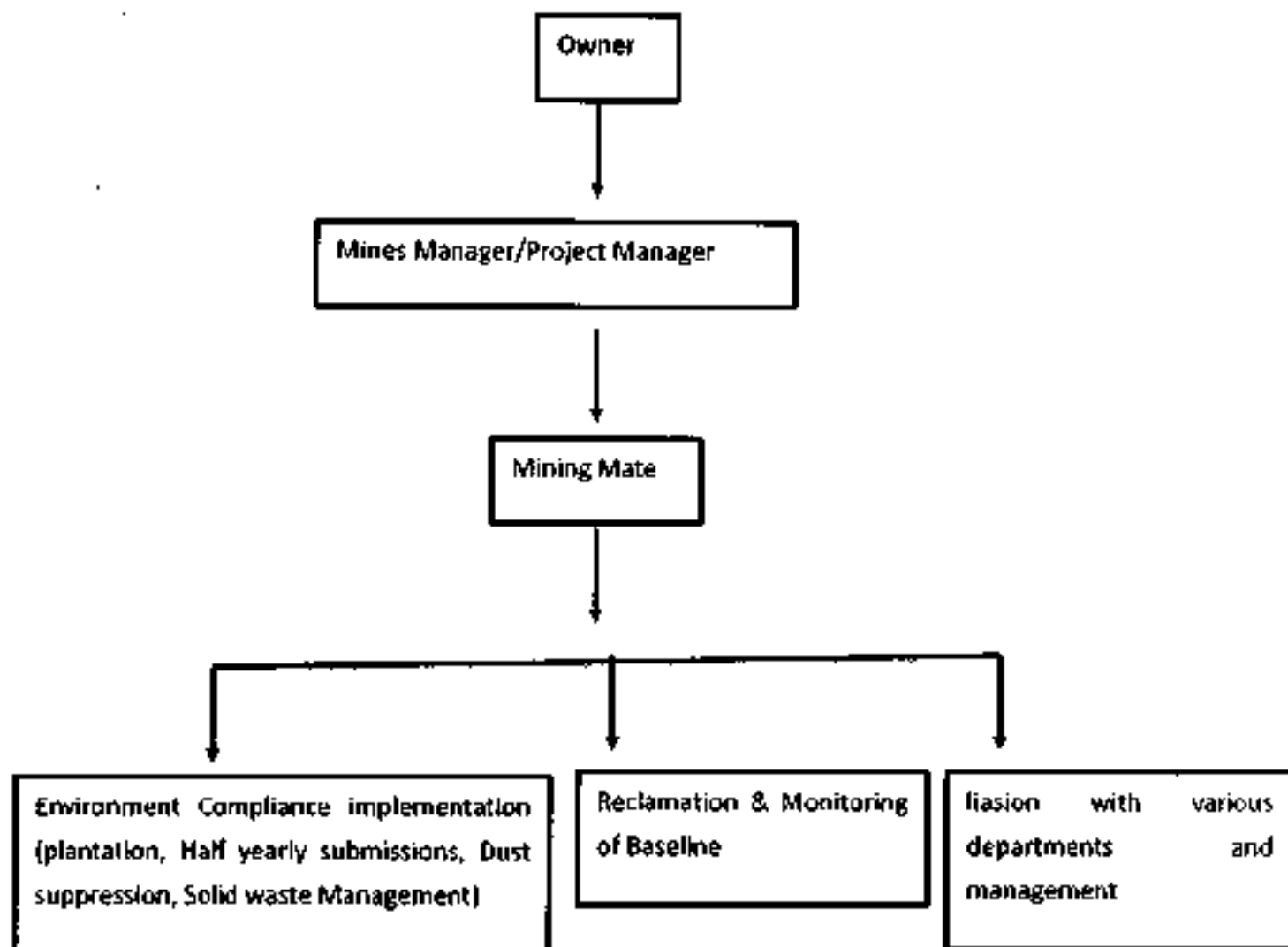
Additional Blasting cost

Blasting			
Training and Awareness of personnel during Blasting operations		50,000	0
Provision of safe distance from the Project site for the settlements			
Blasting shelters and sirens		50,000	5,000
Portable Drop Arm Barrier		2,00,000	10,000

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Total cost	3,00,000	15,000

Environment Management Cell



Organization Chart for Environment Management Cell

Function of Environment Monitoring cell

- **Supervision:** Managed by Mines Manager with a qualified technical team.
- **Personnel:** Includes skilled, semi-skilled, unskilled, and other third parties.
- **Responsibilities:**
 - ✓ Implement environmental control measures.
 - ✓ Oversee reclamation planning and management.
 - ✓ Manage air and water pollution control.
 - ✓ Liaise with state and central statutory agencies.
 - ✓ Develop greenbelt areas.
- **Performance Review:** Assess corporate environmental performance and report non-compliances.
- **Remedial Actions:** Suggest and implement actions for exceeding pollution limits.

- Coordination:

Collect health statistics for workers and local population.

Act as a bridge for project implementation and Project Authorities

Facilitate afforestation efforts.

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx In the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- The Boundary Pillars of the proposed mine lease area will be maintained properly.
- One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.

- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Solid Waste Management

The waste encountered during the mining operation is mainly, During Plan period gritty soil removed will be dumped at northern side with suitable precaution. Some quantity of the removed gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

i. Use of Sharp Drill Bits

ii. **Wet Drilling** – Water will be sprinkled on the site where drilling has to be done.

iii. **Blasting** – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced.
- Optimum quantity of explosives would be used.
- Blasting to be done during favourable weather conditions.

iv. **Operation of Diesel Equipment's** – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

v. **Loading of Product on Truck** – Water will be sprinkled on blasted stone mass before

they are loaded to trucks for transport.

vi. **Movement of Trucks on Road** – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken:

- Regular water sprinkling on Haul road by using water Tankers.
- Regular repair of Haul road.
- All Trucks carrying stone outside lease area will have PUC certificate

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.

- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

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- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
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- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonator shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

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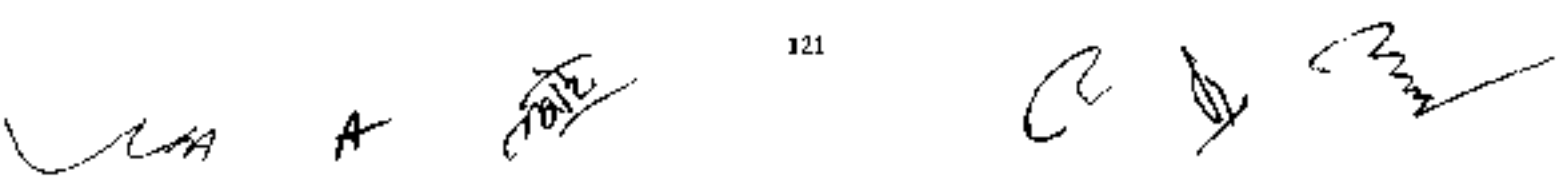
Transportation

The usual method of transporting minerals from the working face is by trucks /tippers /dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any in coming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 22, 23, 24, 25 & 26.10.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith following specific condition :-

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- II. The detailed EMP is to be prepared for the Habitation existing within an area of 500 meter radius of proposed project boundary. This EMP is to be included in EIA report.



10. Salbona Pahar Stone Deposit of Shri Nihar Kha, Village : Salbona Pahar, Thana no. : 07, Distt.: Dumka, Jharkhand (1.623 Ha).

(Proposal no.: SIA/JH/MIN/501791/2024)

Name of the consultant :Oceao-Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.

This is a new project which has been taken for appraisal on 22.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity:44,588.25 Cum Per Annum or 1,20,388.28 Ton Per Annum.

Project and Location Details:

S. No	Parameter	Details
1	Project Name	: Salbona Pahar Stone Mine
2	Proprietor	: Shri Nihar Kha
3	Lessee Address	: Address- Makra Pahari, Po- Sarasdangal, Ps- Shikaripara, District- Dumka, Jharkhand.
4	Lease Area	: Ha: 1.623 Ha Acres: 4.01 Acres
5	Type of Land	: Relyati Land
6	Project Cost	: 47.00 Lakhs
7	EMP Budget	: Capital: 24.94 Lakhs Recurring: 12.50 Lakhs / year
8	New or Expansion	: New
9	Mineable Reserves	: 2,93,275.45 Cum 7,91,843.72 Tonnes
10	Mine Life	: 7 Years
11	Man power	: 24 persons
12	Water Requirement	: Total water requirement is about 13.84 KLD=0.84 KLD (Drinking & Domestic Uses) + 5.0 (Plantation) KLD + 8.0 KLD (Dust Suppression).
13	Water Source	: by Authorised hired water tankers
14	DG Set / power	: 125 KVA (Temporary setup for Backup)
15	Crusher	: No
16	Nearest Water Body	: Hansapathar Pond is about 3.54 km in SE direction.
17	Nearest Habitation	: Salbonapahar is about 0.52 km in W direction
18	Nearest Rail Station	: Pakdaha Harinsing Railway Station is about 5.31 Km in N direction.
19	Nearest Airport	: Sido Kanhu Airport is about 31.07 Km in W.
20	Nearest Forest	: Majhiladih P.F. is about 1.52 km in NE direction. Lila Pahar P.F. is about 5.43 km in SSW direction. Kusumghati P.F. is about 3.93 km in W direction.
21	Road & Highways	: NH-114A is about 2.88 km in N direction.

CO-ORDINATES

S.No	LATITUDE	LONGITUDE
1	24°11'28.304"N	87°34'14.674"E
2	24°11'27.610"N	87°34'15.509"E
3	24°11'26.860"N	87°34'16.766"E
4	24°11'26.402"N	87°34'18.272"E
5	24°11'25.094"N	87°34'17.568"E
6	24°11'23.781"N	87°34'17.294"E
7	24°11'22.311"N	87°34'17.031"E
8	24°11'20.697"N	87°34'16.750"E
9	24°11'20.569"N	87°34'15.907"E
10	24°11'21.918"N	87°34'15.072"E
11	24°11'21.635"N	87°34'13.594"E
12	24°11'22.072"N	87°34'12.991"E
13	24°11'23.500"N	87°34'13.708"E
14	24°11'25.130"N	87°34'14.532"E
15	24°11'26.299"N	87°34'14.944"E
16	24°11'27.250"N	87°34'13.864"E

LAND DETAILS

Khata no.	Plot no.
11, 16, 17 & 18	148, 150 (P), 151 & 152 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	The Letter of Intent (LoI) has been issued by District Mining Officer, Dumka vide letter no. 931/M, dated 08.08.2024.
2	CO	The CO, Shikaripara vide letter no. 675/Ra., dated 19.05.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	DMO, Dumka vide memo no. 803/M, dated 11.05.2023 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	DFO, Wildlife Division, Hazaribag vide letter no. 1155, dated 14.06.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	Division Forest Officer, Dumka Forest Division vide letter no. 1898, dated 31.05.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.

6	DSR	:	This project is mentioned in approved DSR of Dumka District (Sl. no. 40, Page no. 288).
7	Gram Sabha	:	Gram Sabha conducted on 10.04.2022.
8	Mine Plan Approval	:	Approved by District Mining Officer, Dumka vide Memo No. 1155/M, dated 09.10.2024.
9	Qualified Person	:	Shri Vidya Bhushan Mishra vide letter dated 21.10.2024 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	OCM & Semi-Mechanised	
2	Lease Area	:	4.01 ACRES / 1.623HA	Life of Mine – 7 years
3	Waste Generation	:	5 years– 60,753CUM	
4	Stripping Ratio(t/m ³)	:	1:0.06	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Highest Elevation of lease Area	:	249 above MSL	
8	Lowest Elevation of lease Area	:	243 above MSL	
9	Ultimate Working Depth	:	221 mRL	
10	Water Table	:	198mRL	
11	Topography of Mine	:	Uneven land	
12	Explosive Requirement	:	Tentative 12 kg/per day	
13	Diesel/Fuel requirement	:	420 Litres per day	

Production Details

Year	Production of Stone in Cum	Production of Stone in Tonnes	Overburden in Cum	Intercalated waste in Cum	Total Waste in Cum
1st	43,529.00	1,17,528.30	11,600.00	2,291.00	13,891.00
2nd	43,859.60	1,18,420.92	0.00	2,308.40	2,308.40
3rd	44,080.00	1,19,016.00	0.00	2,320.00	2,320.00
4th	44,408.70	1,19,903.49	13,230.00	2,337.30	15,567.30

5th	44,588.25	1,20,388.28	0.00	2,346.75	2,346.75
Total	2,20,465.55	5,95,256.99	24,830.00	11,603.45	36,433.45

Land Use

Land Utilization	Existing Land use Hectares	At the end of plan period (Ha)	At Conceptual period (Ha)
Quarry	0.359	1.348 (0.075ha area shall be Backfilled, 0.836ha converted in to water reservoir & 0.437ha shall be left as dead benches)	1.348 (0.075ha area shall be Backfilled, 0.836ha converted in to water reservoir & 0.437ha shall be left as dead benches)
Waste Dump	NIL	0.00 (Shall be removed and backfilled)	0.00
Road	NIL	0.00 (Comes under quarry)	0.00
Safety Zone Plantation	NIL	0.275	0.275
Total	0.359	1.623	1.623
unused area	1.264	0.00	0.0
Total Applied Lease Area	1.623		

ENVIRONMENT MANAGEMENT

Green Belt Development

S.No.	Location		Area/Length	No of Trees
1	Safety Zone	:	0.275 Ha	440 trees @ 1600 trees per ha
2	Other Reclaimed Area	:	NIL	NIL
3	Haul /Approach Road	:	297 m	297M Approach Road 297/3 = 99Plants 2row plantation of both side road 99x 4 =396 Plant
Total				836

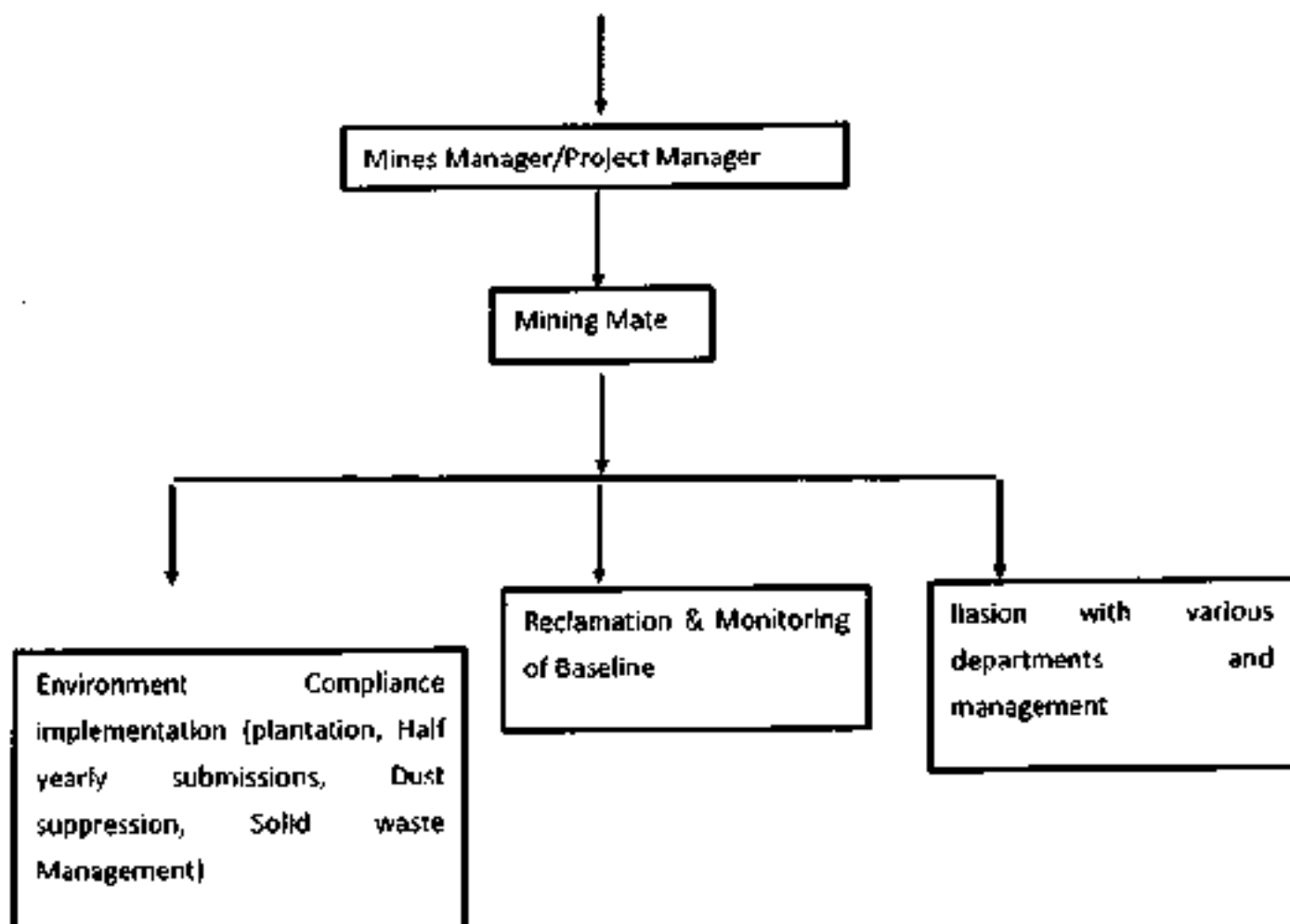
Environment Management Budget

PROPOSED FOR ENVIRONMENT MANAGEMENT COST						
S. No.	Mitigative measures to protect Environment	Criteria Pollutants	Capital Cost (In Lakh)	Recurring cost (In Lakh)	Implementation Responsibility	Frequency and Method
<u>1</u>	Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine) One Water Tanker	Dust (PM 10 & PM 2.5)	20	1.8	Mining Mate supervised by Mine Manager	Daily Basis/Requirement Basis Register/Log book
	Solid waste management	Municipal Solid by workers	0.76	0.2		Record maintain & coordination with vendors
<u>2</u>	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @No. of plants 836 x 500Rs.	No2, So2 & CO reduction Noise reduction	4.18	2.0	Mining Mate supervised by Mine Manager	Care taking@twice a week, Tree Inventory,
<u>3</u>	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	Deviation in Baseline	Nil	0.50	Outsource to NABL Accredited Lab-Monitored by Mine Manager	Mine Manager Review of base line as per monitoring plan proposed
	TOTAL		24.94	12.50		

■ Environmental Management Cell

Owner

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Organization Chart for Environment Management Cell

FUNCTIONS OF ENVIRONMENT MONITORING CELL

Supervision: Managed by Mines Manager with a qualified technical team.

Personnel: Includes skilled, semi-skilled, unskilled, and other third parties.

Responsibilities:

- ❖ Implement environmental control measures.
- ❖ Oversee reclamation planning and management.
- ❖ Manage air and water pollution control.
- ❖ Liaise with state and central statutory agencies.
- ❖ Develop greenbelt areas.

Performance Review: Assess corporate environmental performance and report non-compliances.

Remedial Actions: Suggest and implement actions for exceeding pollution limits.

Coordination:

Collect health statistics for workers and local population.

Act as a bridge for project Implementation and Project Authorities

Facilitate afforestation efforts.

Environment Monitoring Plan (post operation)

■ Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx In the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Additional Blasting Management Cost

Blasting		
Training and Awareness of personnel during Blasting operations	50,000	0
Provision of safe distance from the Project site for the settlements		
Blasting shelters and Sirens	50,000	5,000
Portable Drop Arm Barrier	2,00,000	10,000
Total cost	3,00,000	15,000

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.

- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard.
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Solid Waste Management

The waste encountered during the mining operation is mainly. During Plan period gritty soil removed will be dumped at northern side with suitable precaution. Some quantity of the removed gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible.

Water Quality Management

- a) Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- b) Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- c) Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- d) Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.

- e) Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- f) Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

i. Use of Sharp Drill Bits

ii. Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

iii. Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- a) Controlled blasting would be practiced.
- b) Optimum quantity of explosives would be used.
- c) Blasting to be done during favourable weather conditions.

iv. Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

v. Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

vi. Movement of Trucks on Road – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken:

- Regular water sprinkling on Haul road by using water Tankers.
- Regular repair of Haul road.
- All Trucks carrying stone outside lease area will have PUC certificate

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard Identification & Risk Analysis In Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5

5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to over charging of the shot holes as a result of certain special features of the local ground. Flying

rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonator shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to

ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overtaking vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks /tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any in coming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required).

- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.11.18 decided that the proposal for Salbona Pahar Stone Deposit of Shri Nihar Kha, Village : Salbona Pahar, Thana no. : 07, Distt.: Dumka, Jharkhand (1.623 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MerLiFE Portal (<https://merilife.nlc.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to be submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

11. Manjhladih Stone Mine of M/s Baba Baidyanath Stone Works, Village : Manjhladih, Thana no. : 18, Distt.: Dumka, Jharkhand (1.814 Ha).

(Proposal no.: SIA/JH/MIN/501877/2024)

Name of the consultant :Oceao-Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.

This is a new project which has been taken for appraisal on 22.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity:22,980 Cum Per Annum or 62,046 Ton Per Annum

Project and Location Details:

S. No	Parameter	Details
1	Project Name	: Manjhladih Stone Mine - M/s Baba Baidyanath Stone Works
2	Partner	: Smt. Priya Raj & Shri Md. Anwarul Ansari.
3	Lessee Address	: R/O- Gram- Thadidulampur, Thana- Kunda, District- Deoghar, Jharkhand-814114
4	Lease Area	: Ha: 1.814 Ha Acres: 4.48 Acres
5	Type of Land	: Raiyati Land
6	Project Cost	: 43.0 Lakhs
7	EMP Budget	: Capital: 24.7 Lakhs Recurring: 5.5 Lakhs / year
8	Now or Expansion	: New
9	Mineable Reserves	: 1,14,478 Cum 3,09,091 Tonnes
10	Mine Life	: 5 Years
11	Man power	: 18 persons
12	Water Requirement	: Total water requirement is about 7.54 KLD= 0.54 (Drinking Water & Domestic Uses) + 3 KLD (Water sprinkling) + 4 KLD (Plantation).
13	Water Source	: The drinking water will be available from nearby village by tractor tank manually by labours at the site.
14	DG Set / power	: 125 KVA (Temporary setup for Backup)
15	Crusher	: No
16	Nearest Water Body	: Hansapathar village Pond is about 3.54 km in SE direction.
17	Nearest Habitation	: Manjhladih is about 0.20 km in N direction
18	Nearest Rail Station	: Pakdaha Harinsing Railway Station is about 4.51 Km in N direction.
19	Nearest Airport	: Deoghar Airport is about 92.65 Km in WNW direction.
20	Nearest Forest	: Manjhladih P.F. is about 0.38 km in NNE direction.
21	Road & Highways	: NH-114 is about 1.97 km in N direction. NH-14 is about 19.62 km in ESE direction.

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CO-ORDINATES

S.No.	LATITUDE	LONGITUDE	S.No.	LATITUDE	LONGITUDE
1	24° 11' 56.213" N	87° 34' 53.382" E	24	24° 11' 49.242" N	87° 34' 55.074" E
2	24° 11' 56.159" N	87° 34' 54.177" E	25	24° 11' 49.681" N	87° 34' 55.278" E
3	24° 11' 56.042" N	87° 34' 54.817" E	26	24° 11' 49.999" N	87° 34' 54.497" E
4	24° 11' 55.838" N	87° 34' 55.588" E	27	24° 11' 50.077" N	87° 34' 53.704" E
5	24° 11' 55.292" N	87° 34' 55.588" E	28	24° 11' 49.546" N	87° 34' 53.698" E
6	24° 11' 54.800" N	87° 34' 55.898" E	29	24° 11' 49.831" N	87° 34' 53.072" E
7	24° 11' 54.797" N	87° 34' 56.640" E	30	24° 11' 49.499" N	87° 34' 52.333" E
8	24° 11' 54.714" N	87° 34' 57.333" E	31	24° 11' 49.853" N	87° 34' 51.776" E
9	24° 11' 54.189" N	87° 34' 56.680" E	32	24° 11' 50.827" N	87° 34' 51.509" E
10	24° 11' 53.472" N	87° 34' 56.489" E	33	24° 11' 51.103" N	87° 34' 52.128" E
11	24° 11' 52.615" N	87° 34' 56.252" E	34	24° 11' 50.495" N	87° 34' 54.089" E
12	24° 11' 51.919" N	87° 34' 56.659" E	35	24° 11' 51.159" N	87° 34' 54.400" E
13	24° 11' 51.780" N	87° 34' 55.802" E	36	24° 11' 51.887" N	87° 34' 52.397" E
14	24° 11' 51.009" N	87° 34' 56.006" E	37	24° 11' 52.273" N	87° 34' 52.547" E
15	24° 11' 51.331" N	87° 34' 56.944" E	38	24° 11' 52.219" N	87° 34' 53.297" E
16	24° 11' 51.352" N	87° 34' 57.655" E	39	24° 11' 52.508" N	87° 34' 54.218" E
17	24° 11' 50.740" N	87° 34' 57.663" E	40	24° 11' 54.362" N	87° 34' 55.224" E
18	24° 11' 49.874" N	87° 34' 57.580" E	41	24° 11' 54.627" N	87° 34' 53.661" E
19	24° 11' 49.831" N	87° 34' 56.862" E	42	24° 11' 53.904" N	87° 34' 53.506" E
20	24° 11' 50.248" N	87° 34' 56.770" E	43	24° 11' 53.251" N	87° 34' 53.233" E
21	24° 11' 50.163" N	87° 34' 56.059" E	44	24° 11' 53.739" N	87° 34' 52.590" E
22	24° 11' 49.746" N	87° 34' 55.802" E	45	24° 11' 54.850" N	87° 34' 52.944" E
23	24° 11' 49.122" N	87° 34' 55.832" E	46	24° 11' 55.603" N	87° 34' 53.195" E

LAND DETAILS

Khata no.	Plot no.
03	1385
16	1383, 1388 & 1389
44	1384, 1387 (P) & 1374

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Dumka vide letter no. 788/M, dated 09.07.2024.
2	CO	:	The CO, Shikaripara vide letter no. 59/Ra., dated 01.02.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatyan & Register II.
3	DMO	:	DMO, Dumka vide memo no. 919/M, dated 07.08.2024 certified that 02 other mining lease area (2.97 Acre & 4.04 Acre) exists within 500 meters radius from proposed project site and total area is 11.49 Acre.

4	DFO Wild life	:	DFO, Wildlife Division, Hazaribag vide letter no. 356, dated 26.02.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Dumka Forest Division vide letter no. 358, dated 22.02.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Dumka District (Sl. no. 20, Page no. 283).
7	Gram Sabha	:	Gram Sabha conducted on 31.10.2021.
8	Mine Plan Approval	:	Approved by District Mining Officer, Dumka vide Letter No. 1058/M, dated 12.09.2024.
9	Qualified Person	:	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	OCM & Mechanised
2	Lease Area	:	4.48 ACRES / 1.814 Ha Life of Mine – 5 Years
3	Waste Generation	:	5 years– 30,093 Cum
4	Stripping Ratio(t/m ³)	:	1:0.09
5	Working Days	:	300
6	Bench: size & No	:	6m x 6m
7	Highest Elevation of lease Area	:	117 above MSL
8	Lowest Elevation of lease Area	:	112 above MSL
9	Ultimate Working Depth	:	94 above MSL
10	Water Table	:	62 above MSL (50 BGL)
11	Topography of Mine	:	Almost flat land with two hillocks
12	Explosive Requirement	:	Tentative 51 44 kg/per day
13	Diesel/Fuel requirement	:	420 Litres per day

Production Details

Year	Generation of waste/O.B in cum	Production of Stone in Cum	Production of Stone in Ton	Grade/Uses
1st	9449	22583	60974	Construction & Road
2nd	2188	22973	62027	Construction & Road
3rd	13200	22980	62046	Construction & Road
4th	0	22965	62006	Construction & Road

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5th	5256	22970	62019	Construction & Road
Total	30093	114471	309072	
Production proposed in- 30093Cum/309072 Ton				
Stripping Ratio in (m3/t)- 1:0.09				

Land Use

	Existing	First to Fifth Years	After Life of Mine
Category	Area in Hectares	Area in Hectares	Area in Hectares
Quarry	0.14	0.934	0.954ha area will be convert as water reservoir
Haul Road	0.01	0.02	0.00
Proposed Crusher	0.00	0.00	Crusher not proposed
Green belt in Safety Zone	0.00	0.86	0.86
Dump with Parapet wall & Garland drain	0.00	0.00	First Year top soil will be used for plantation and rest overburden shall used for haul road dressing and backfilling.
Total area in use	0.15	1.814	1.814
Balance unused area	1.664	0.00	0.00
Balance used area	0.00	0.00	0.00
Total Applied Lease Area	1.814	1.814	1.814

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Place of Plantation	Spacing b/w plants	Total No. of Plants	Area Cover in Square Meters	Total Area in Ha.	Species
1st	Safety Zone	2.5 x 2.5	1376	8600	0.86	Gulinohar, Gular, Sagwan, Sakua <u>Fruit Bearing Trees</u> Mango, Jackfruit, Guava
	Haul Road	3 x 3	564	423M Approach Road 423/3=141Plants 141x4row=564Plants		
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care	---	---	---	---	

	&Protection					
Total			1940	8600	0.86	

- Gablon Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

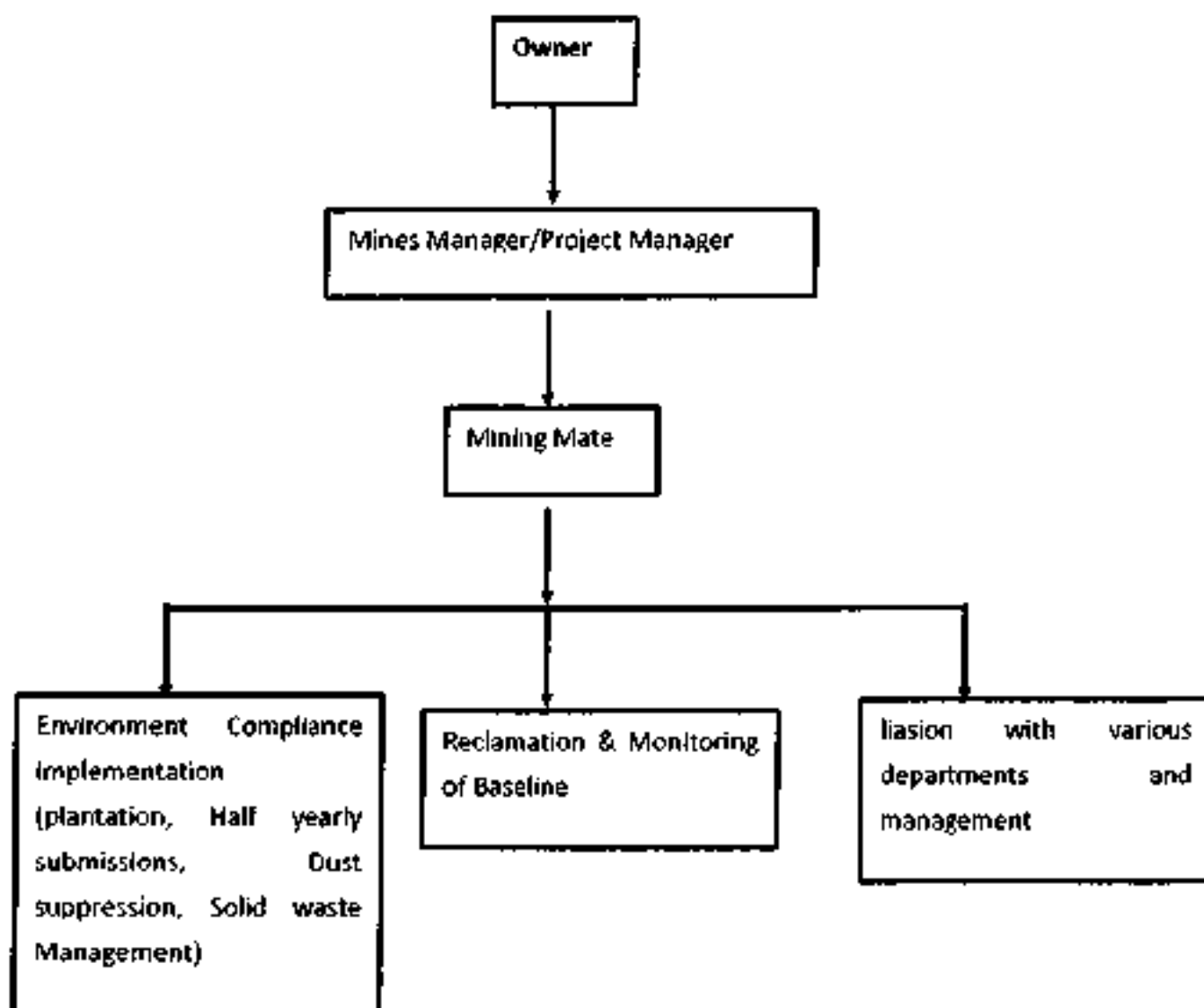
Environment Management Budget

S. No.	Mitigative measures to protect Environment	Criteria Pollutants	Capital Cost (in Lakh)	Recurring cost (in Lakh)	Implementation Responsibility	Frequency and Method
1.	Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine) One Water Tanker	Dust (PM 10 & PM 2.5)	14.5	1.8	Mining Mate supervised by Mine Manager	Daily Basis/Requirement Basis Register/Log book
	Solid waste management	Municipal Solid by workers	0.5	0.2		Record maintain & coordination with vendors
2.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @No. of plants 1940 x 500Rs.	No2, So2 & CO reduction Noise reduction	9.7	3.0	Mining Mate supervised by Mine Manager	Care taking @twice a week, Tree inventory,
3.	Environment Monitoring (Air, Water, Noise& Soil Monitoring)	Deviation in Baseline	Nil	0.50	Out source to NABL Accredited Lab- Monitored by Mine Manager	Mine Manager Review of base line as per monitoring plan proposed
	TOTAL		24.7	5.0		

Additional Management Cost For Blasting (fly rock)

Blasting		
Training and Awareness of personnel during Blasting operations	50,000	0
Provision of safe distance from the Project site for the settlements		
Blasting shelters and sirens	50,000	5,000
Portable Drop Arm Barrier	2,00,000	10,000
Total cost	3,00,000	15,000

Environmental Management Cell



Organization Chart for Environment Management Cell

Responsibility of Environmental Management Cell

- ☐ **Supervision:** Managed by Mines Manager with a qualified technical team.
- ☐ **Personnel:** Includes skilled, semi-skilled, unskilled, and other third parties.

☐ **Responsibilities:**

- ✓ Implement environmental control measures.
- ✓ Oversee reclamation planning and management.
- ✓ Manage air and water pollution control.
- ✓ Liaise with state and central statutory agencies.
- ✓ Develop greenbelt areas.

☐ **Performance Review:** Assess corporate environmental performance and report non-compliances.

☐ **Remedial Actions:** Suggest and implement actions for exceeding pollution limits.

☐ **Coordination:**

Collect health statistics for workers and local population.

Act as a bridge for project implementation and Project Authorities

Facilitate afforestation efforts.

Environment Monitoring Plan (post operation)

• Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx in the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring. Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.

LA A    

- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Solid Waste Management

The waste encountered during the mining operation is mainly. During Plan period gritty soil removed will be dumped at northern side with suitable precaution. Some quantity of the removed gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

- i. **Use of Sharp Drill Bits**
- ii. **Wet Drilling** – Water will be sprinkled on the site where drilling has to be done.
- iii. **Blasting** – Blasting generate gases & dust. This effect would be mitigated by following measures.

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- Controlled blasting would be practiced.
- Optimum quantity of explosives would be used.
- Blasting to be done during favourable weather conditions.

iv. **Operation of Diesel Equipment's** – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

v. **Loading of Product on Truck** – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

vi. **Movement of Trucks on Road** – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken:

- Regular water sprinkling on Haul road by using water Tankers.
- Regular repair of Haul road.
- All Trucks carrying stone outside lease area will have PUC certificate

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20 Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.

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- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to over charging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.

- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonators shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overtaking vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks /tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.

- Navigation signs will be provided at each and every turning point up to the mainroad (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Manjhladih Stone Mine of M/s Baba Baidyanath Stone Works, Village : Manjhladih, Thana no. : 18, Distt.: Dumka, Jharkhand (1.814 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>)
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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A. Consideration of Proposals :

1. Asanjola Stone Mine of M/s Roy & Roy Mining Pvt. Ltd., Village : Asanjola, Thana no. : 83, P.S. : Hiranpur, Distt.: Pakur, Jharkhand (2.83 Ha).

(Proposal no.: SIA/JH/MIN/501895/2024)

Name of the consultant :Oceao-Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.

This is a new project which has been taken for appraisal on 23.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Environmental Clearance (EC) after ToR.

EC Application for: Proposed Capacity:69,299 Cum/Annum, 1, 94,037 Tonnes/Annum

The State Expert Appraisal Committee, Jharkhand deliberated the project during its 115th meeting held on 23-27.07.2024 and SEIAA, Jharkhand has approved the ToRs in 115th meeting held on 06th&07thAugust, 2024. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2024-25/3174/2024/223, dated 16.08.2024.The final EIA / EMP submitted by PP to SEAC on 21.10.2024.

Project and Location Details:

S. No	Parameter	Details
1	Project Name	: Asanjola Stone Mine
2	Lessee	: M/s Roy And Roy Mining Pvt. Ltd., Director- Shri Anil Kumar
3	Lessee Address	: R/o- H. No.-02, Mehus, District- Shekhpura, Bihar
4	Lease Area	: Ha: 2.83Ha Acres: 7.0Acres
5	Type of Land	: Raiyati Land
6	Project Cost	: 57Lakhs
7	EMP Budget	: Capital: 19.92Lakhs Recurring: 5.99Lakhs / year
8	New or Expansion	: New
9	Mineable Reserves	: 4,83,020Cum 13,52,456 Tones
10	Mine Life	: 07 Years
11	Mining Depth	: 22 m
11	Man power	: 24persons
12	Water Requirement	: Total water requirement is about 7.69 KLD= 0.69 (Drinking Water & Domestic Uses) + 3 KLD (Water sprinkling) + 4 KLD(plantation).
13	Water Source	: by Authorised hired water tankers
14	DG Set / power	: 125KVA (Temporary setup for Backup)
15	Crusher	: No
16	Nearest Water Body	: Torai Nadiis about 7.8 km in NNEdirection.
17	Nearest Habitation	: Village Asanjola is about 0.37 km in Ndirection

18	Nearest Rail Station	:	Pakur Railway Station is about 14.9 Km in ENE direction.
19	Nearest Airport	:	Deoghar Airport is about 103 Km in W direction.
20	Nearest Forest	:	Dhangara Pahad P.F. is about 5 km in ENE direction.
21	Road & Highways	:	NH-133A is about 7.4 km in NE direction.

CO-ORDINATES

S. No.	Latitude	Longitude
1	24°35'58.498"N	87°42'52.502"E
2	24°35'55.599"N	87°42'52.037"E
3	24°35'52.834"N	87°42'51.665"E
4	24°35'52.022"N	87°42'53.645"E
5	24°35'51.091"N	87°42'56.076"E
6	24°35'52.757"N	87°42'56.980"E
7	24°35'54.224"N	87°42'57.664"E
8	24°35'56.480"N	87°42'58.605"E
9	24°35'57.394"N	87°42'55.951"E

LAND DETAILS

Khata no.	Plot no.
04	575
05	574
07	577 (P)
12	576
18	573

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LOI) has been issued by District Mining Officer, Pakur vide memo no. 356/M, dated 15.03.2024.
2	CO	:	The CO, Hiranpur vide letter no. 24/Ra., dated 18.01.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatyan & Register II and also mentioned that the habitation of 15 house at a distance of 400 meters of proposed project site, an EMP has been submitted in this regard.
3	DMO	:	DMO, Pakur vide memo no. 441/M, dated 01.04.2024 certified that 02 other mining lease area (5.20 Acre & 7.09 Acre) exists within 500 m radius from proposed project site and total area is 19.29 Acre (7.81 Ha)

4	DFO Wild Life	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 279, dated 06.02.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	Division Forest Officer, Pakur Forest Division vide letter no. 133, dated 25.01.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	The DMO, Pakur has been certified vide memo no. 483/M, dated 09.04.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 114, Page no. 119).
7	Gram Sabha	BDO, Hiranpur vide letter no. 81/Vl., dated 25.01.2024 informed that Gram Sabha conducted on 24.01.2024.
8	Mine Plan Approval	Approved by District Mining Officer, Pakur vide Memo No. 957/M, dated 01.07.2024.
9	Qualified Person	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.
10	Public Hearing	Public Hearing conducted on 07.10.2024.
11	Baseline study	1 st March, 2024 to 31 st May, 2024.

Working Details

1	Mining Method	: OCM & Mechanised
2	Lease Area	: 7.0 ACRES / 2.83 HA Life of Mine – 07 years
3	Waste Generation	: 5 Years- 63066CUM
4	Stripping Ratio(t/m ³)	: 1:0.06
5	Working Days	: 300
6	Bench: size & No	: 6m x 6m
7	Highest Elevation of lease Area	: 132 m Above MSL
8	Lowest Elevation of lease Area	: 130 m Above MSL
9	Ultimate Working Depth	: 108 Above MSL (22m)
10	Water Table	: 90 Above MSL
11	Topography of Mine	: Uneven Land
12	Explosive Requirement	: Tentative 129.4Kg/ Day
13	Diesel/Fuel requirement	: 688Litres per day

Production Details

Year	Generation of Waste/O. B In cum	Production of Stone In Cum	Production of Stone in Tonnes	Grade/Uses
1st	37884	65566	183585	Construction & Road

2nd	00	68670	192276	Construction & Road
3rd	25182	69299	194037	Construction & Road
4th	00	68992	193178	Construction & Road
5th	00	69015	193242	Construction & Road
Total	63066	3,41,472	9,56,318	
Stripping Ration in (m³/t)- 1:0.06				

Land Use

LAND USE PATTERN			
	Existing	First to Fifth Years	After Life of Mine
Category	Area in Hectares	Area in Hectares	Area in Hectares
Quarry	0.00	1.79	2.35 ha area will be converted as water reservoir
Haul Road	0.00	0.02	0.00
Proposed Crusher	0.00	0.00	0.00
Green belt in Safety Zone	0.00	0.48	0.48
Dump with Parapet wall & Garland drain	0.00	0.22	Top soil will be used for plantation and rest overburden shall use for haul road dressing and backfilling
Total area in use	0.00	2.51	2.83
Balance unused area	2.83	0.32	0.00
Balance used area	0.00	0.00	0.00
Total Applied Lease Area	2.83	2.83	2.83

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Place of Plantation	Spacing b/w plants	Total No. of Plants	Area Cover in Square Meters	Total Area in Ha.	Species
1st	Safety Zone	2.5 x 2.5	768	4800	0.48	Gulmohar, Gular, Shami, Sagwan, Sakua
	Haul Road	2.5 x 2.5	160	100Meter Two row plantation in Both Side 40*4= 160		
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care &	---	---	---	---	

	Protection				
Total		928	4800	0.48	

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

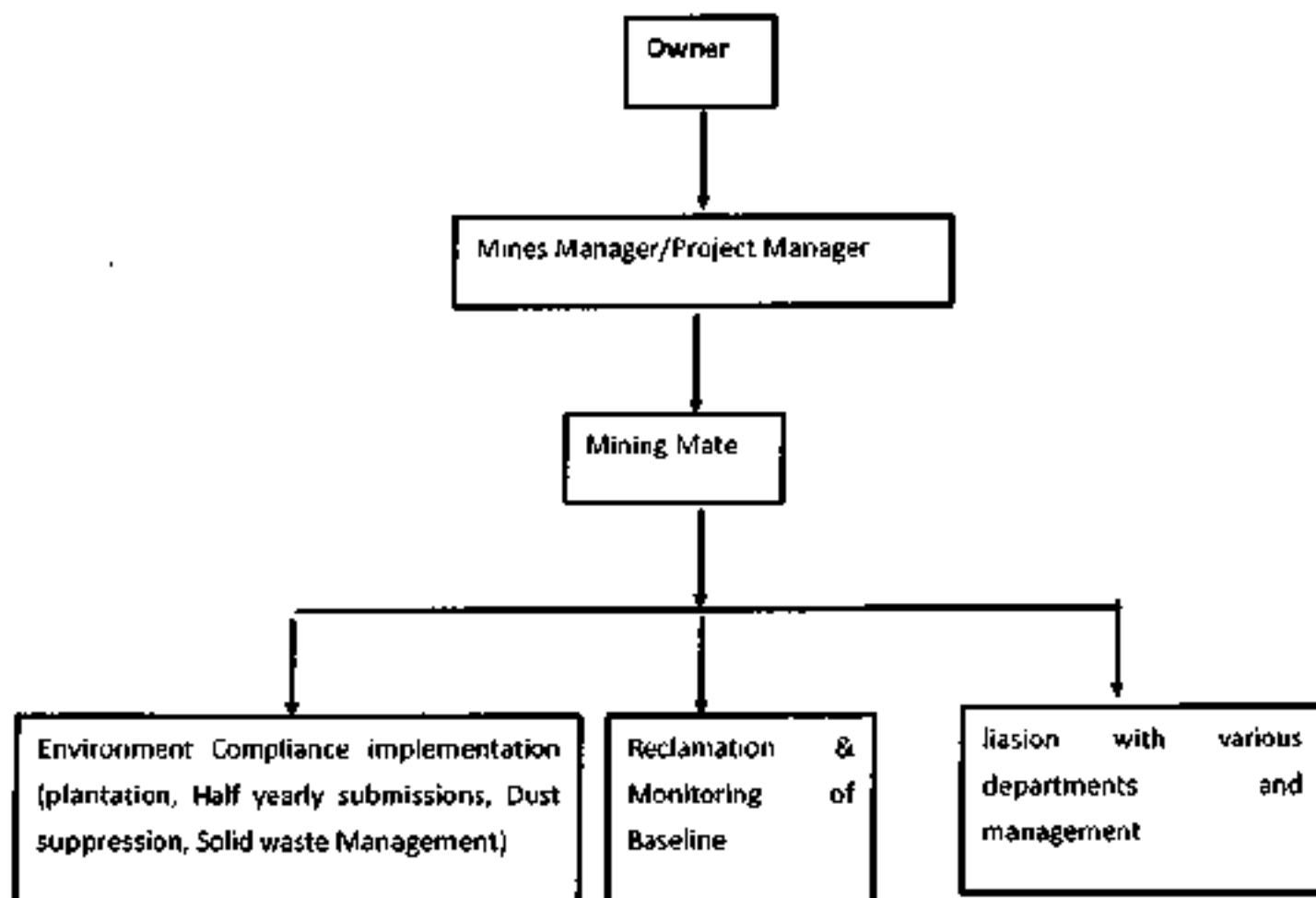
Environment Management Budget

S NO.	Particulars	Budget Provisions (Rs)	
		Capital	Recurring
Water Demand			
1(a)	Fixed Overhead water sprinkling system with solar pump for outgoing and incoming transportation vehicles for haul road and greenbelt. Cost for 300 days for 7 KLD @5 KL tanker capacity, Rupees 500/- per tanker	1,00,000	2,10,000
	& One dedicated tanker of 5 KL for Greenbelt Management	10,00,000	50,000
1(b)	Discharge of hired wastewater tanker 300 days for 0.55 KLD @5 KL tanker capacity, Rupees 2000/per tanker	0	66,000
2	Prepare & Maintenance of approach road (Max. Road length 100 m, Width 4.0 m) @ 500Rs. /Meter.	50,000	5,000
3	Monitoring [Air, Water, Soil & Noise]	Nil	1,00,000
4	Settling tank 2 in no's (LBH 12 m* 7 m* 4 m) & Garland drains	2,00,000	30,000
5	Wire Fence 644 m (perimeter) x 300 /- meter	1,93,200	19,320
Plantation Scheme			
Plantation in consultation with DFO & Gram Panchayat			
6	Green belt development safety zone 7.5mtr and along the road (for each plants including hedges and fences and tree guard at approach roads) 896 No. of plants x 500 Rs.	4,48,000	1,00,000
Solid Waste Management			
7	Bins 2 Nos.	1,500	4,000
8	Transport of Waste for disposal		
9	Vehicle Maintenance +PUC Certification	Nil	15,000

	Total Cost	19,92,700	5,99,320

Environment management cell

ORGANIZATION CHART FOR ENVIRONMENT MANAGEMENT CELL



FUNCTIONS OF ENVIRONMENT MONITORING CELL

- Supervision: Managed by Mines Manager with a qualified technical team.
- Personnel: Includes skilled, semi-skilled, unskilled, and other third parties.
- Responsibilities:
 - ✓ Implement environmental control measures.
 - ✓ Oversee reclamation planning and management.
 - ✓ Manage air and water pollution control.
 - ✓ Liaise with state and central statutory agencies.
 - ✓ Develop greenbelt areas.
- Performance Review: Assess corporate environmental performance and report non-compliances.
- Remedial Actions: Suggest and implement actions for exceeding pollution limits.
- Coordination:

Collect health statistics for workers and local population.

Act as a bridge for project Implementation and Project Authorities

Facilitate afforestation efforts.

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Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx In the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Time Bound action Plan with Budgetary Allocation

Sl. No.	Activities as per Public Hearing	Year of Implementation & Budgets					Total
		1 st Year	2 nd Year	3 rd Year	4 th Year	5 th Year	
1	water facilities for the villagers.	100000	100000	100000	100000	100000	5.00000

2	Medical aid for poor people	50000	50000	50000	50000	50000	2,50,000
3	For water facility for the villagers (Repairing of non- functional hand pumps in the villages.)	50,000	50,000	50,000	50,000	50,000	2,50,000
4	Compensatory budget for anticipated damage to habitation	75000	75000	75000	75000	75000	3,75,000
6	Health checkup facility	50000	50000	50000	50000	50000	2,50,000
7	Money should be given for food and drink during Sohrai and other festivals in the year.	25000	25000	25000	25000	25000	125000
	Total	350000	350000	350000	350000	350000	1750000

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- The Boundary Pillars of the proposed mine lease area will be maintained properly.
- One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- If any tree felling than necessary permission shall be taken from the competent authority.
- Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.

- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Solid Waste Management

The waste encountered during the mining operation is mainly, During Plan period gritty soil removed will be dumped at northern side with suitable precaution. Some quantity of the removed gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

i. Use of Sharp Drill Bits

ii. **Wet Drilling** – Water will be sprinkled on the site where drilling has to be done.

iii. **Blasting** – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced.
- Optimum quantity of explosives would be used.
- Blasting to be done during favourable weather conditions.

iv. **Operation of Diesel Equipment's** – They generate Noxious gases. It will be ensured that all mining machinerles & transport vehicles would be repaired & maintained regularly.

v. Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

vi. Movement of Trucks on Road – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken:

- Regular water sprinkling on Haul road by using water Tankers.
- Regular repair of Haul road.
- All Trucks carrying stone outside lease area will have PUC certificate

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.

- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the

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drill hole continuously and discharges the same in a dust collector specially provided for the purpose.

- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to over charging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted

by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonators shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the work place (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks /tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any in coming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Asanjola Stone Mine of M/s Roy & Roy Mining Pvt. Ltd., Village : Asanjola, Thana no. : 83, P.S. : Niranpur, Distt.: Pakur, Jharkhand (2.83 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- I. In compliance of OM no F.No. IA3-22/3/2024-IA III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

2. Tangidaha Stone Mine of M/s N.N. Stone Works (Partners : Shri Nabulit Shekh & Shri Nurmahammad Shekh), Village : Tangidaha, Thana no. : 08, Distt.: Pakur, Jharkhand (2.34 Ha).

{Proposal no.: SIA/JH/MIN/499827/2024}

Name of the consultant :Oceao-Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.

This is a new project which has been taken for appraisal on 23.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Environmental Clearance (EC) after ToR.

The State Expert Appraisal Committee, Jharkhand deliberated the project during its 115th meeting held on 23-27.07.2024 and SEIAA, Jharkhand has approved the ToRs in 115th meeting held on 06th & 07th August, 2024. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2024-25/3167/2024/224, dated 16.08.2024. The final EIA / EMP submitted by PP to SEAC on 21.10.2024.

Project and Location Details:

S. No	Parameter	Details												
1	Project Name	: Tangidaha Stone Mine (M/s N.N Stone Works)												
2	Partner's	: Shri Nabiut Shekh and Nurmahammad Sekh.												
3	Lessee Address	: R/O- Gram- Jhikarhati West, VTC - Jhikarhati P.O.- Jhikarhati, District- Pakur, Jharkhand.												
4	Lease Area	: 2.34Ha 5.78Acres												
5	Type of Land	: Raiyali Land												
6	Project Cost	: 57 Lakhs												
7	EMP Budget	: Capital: 22.68Lakhs Recurring: 7.28Lakhs / year												
8	New or Expansion	: New												
9	Mineable Reserves	: 4,01,970Cum 10,85,319Ton												
10	Mine Life	: 10 Years												
11	Man power	: 24 persons												
12	Water Requirement	: Total water requirement is about 7.69 KLD=0.69 KLD (Drinking & Domestic Uses) + 4.0 (Plantation) KLD + 3.0 KLD (Dust Suppression).												
13	Water Source	: By Authorised hired water tankers												
14	DG Set / power	: 125 KVA (Temporary setup for Backup)												
15	Crusher	: Not Proposed												
16	Nearest Water Body	: Kalupara Village Pond is about 0.58 km in ENE direction.												
17	Nearest Habitation	: Tangidaha Village is about 0.39 km in WSW direction												
18	Nearest Rail Station	: Nagarbani Railway station is about 14.5 km in ESE direction.												
19	Nearest Airport	: Deoghar Airport is about 104.7 km in W direction.												
20	Nearest Forest	<table border="1"> <thead> <tr> <th>Forest Name</th><th>Distance (Km)</th><th>Direction</th></tr> </thead> <tbody> <tr> <td>GANROPAHARI P.F.</td><td>7.85</td><td>NW</td></tr> <tr> <td>AMIRJOLA P.F.</td><td>14.6</td><td>W</td></tr> <tr> <td>BELPAHARI P.F.</td><td>4.08</td><td>SW</td></tr> </tbody> </table>	Forest Name	Distance (Km)	Direction	GANROPAHARI P.F.	7.85	NW	AMIRJOLA P.F.	14.6	W	BELPAHARI P.F.	4.08	SW
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GANROPAHARI P.F.	7.85	NW												
AMIRJOLA P.F.	14.6	W												
BELPAHARI P.F.	4.08	SW												
21	Nearest State Highway/ National highway	: NH-133A is about 10.67 km in NNE direction. SH - 18 is about 14.04 km in WNW direction. SH - 7 is about 14.04 km in E direction												

CO-ORDINATES:

S. No.	Latitude	Longitude	S. No.	Latitude	Longitude
1	24° 33' 39.224" N	87° 43' 41.432" E	13	24° 33' 34.310" N	87° 43' 44.189" E
2	24° 33' 39.481" N	87° 43' 41.122" E	14	24° 33' 34.194" N	87° 43' 44.661" E

3	24° 33' 38.592" N	87° 43' 39.987" E	15	24° 33' 35.416" N	87° 43' 45.384" E
4	24° 33' 37.992" N	87° 43' 39.002" E	16	24° 33' 35.669" N	87° 43' 45.151" E
5	24° 33' 37.093" N	87° 43' 37.631" E	17	24° 33' 36.307" N	87° 43' 45.290" E
6	24° 33' 35.981" N	87° 43' 36.327" E	18	24° 33' 37.101" N	87° 43' 45.329" E
7	24° 33' 35.705" N	87° 43' 36.744" E	19	24° 33' 37.247" N	87° 43' 44.032" E
8	24° 33' 35.530" N	87° 43' 38.079" E	20	24° 33' 37.624" N	87° 43' 43.724" E
9	24° 33' 35.271" N	87° 43' 40.060" E	21	24° 33' 37.967" N	87° 43' 43.064" E
10	24° 33' 35.022" N	87° 43' 41.954" E	22	24° 33' 38.753" N	87° 43' 42.064" E
11	24° 33' 34.862" N	87° 43' 43.196" E	23	24° 33' 39.534" N	87° 43' 42.556" E
12	24° 33' 34.718" N	87° 43' 43.642" E			

LAND DETAILS

Khata no.	Plot no.
03	79 (P) & 80 (P)
15	83

STATUTORY CLEARANCES

1	LOI / Lease docs	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 397/M, dated 20.03.2024.
2	CO	The CO, Maheshpur vide letter no. 1195/Ra, dated 14.12.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatyan & Register II and also mentioned that the habitation of 13-14 house at a distance of 280 meters of proposed project site, an EMP has been submitted in this regard.
3	DMO	DMO, Pakur vide memo no. 485/M, dated 09.04.2024 certified that 05 other mining lease area (6.00 Acre, 6.00 Acre, 5.41 Acre, 6.57 Acre & 6.41 Acre) exists within 500 m radius from proposed project site and total area is 36.17 Acre or 14.64 Ha.
4	DFO Wild Life	DFO -cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1454, dated 01.07.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	Division Forest Officer, Pakur Forest Division vide memo no. 1553, dated 16.12.2023 certified that the distance of reserved / protected forest land is 1342 meter from proposed project site.
6	DSR	The DMO, Pakur has been certified vide memo no. 486/M, dated 09.04.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (SI no. 299, Page no. 132).

7	Gram Sabha	:	BDO, Maheshpur vide letter no. 2386/Vi., dated 04.12.2023 informed that Gram Sabha conducted on 29.11.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 966/M, dated 02.07.2024.
9	Qualified Person	:	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.
10	Public Hearing	:	Public Hearing conducted on 04.10.2024.
11	Baseline study	:	1 st March, 2024 to 31 st May, 2024.

Working Details

1	Mining Method	:	OCM & Mechanised
2	Lease Area	:	2.34ha/5.78 Acre Life of Mine ~ 10 years
3	Waste Generation	:	5 years-47,265 CUM
4	Stripping Ratio	:	1:0.07
5	Working Days	:	300
6	Benchest size & No	:	6m x 6m (05 No. of Benches)
7	Highest Elevation of lease Area	:	103 AMSL
8	Lowest Elevation of lease Area	:	97 AMSL
9	Ultimate Pit Limit Depth (m)	:	67 AMSL (30M)
10	Water Table	:	56AMSL (40BGL) (from Lowest elevation)
11	Topography of Mine	:	Almost flat with two hillocks
12	Explosive Requirement	:	Tentative 136.17kg/per day
13	Diesel/Fuel requirement	:	536Litre per day

Production Details

Year	Generation of Waste/O. B In cum	Production of Stone in Cum	Production of Stone in Tonnes	Grade/Uses
1st	29425	39672	107114	Construction & Road
2nd	17840	39920	107784	Construction & Road
3rd	00	40238	108643	Construction & Road
4th	00	40347	108937	Construction & Road
5th	00	40212	108572	Construction & Road
Total	47265	2,00,389	5,41,050	
Stripping Ratio in (m ³ /t)- 1:0.07				

Land Use Pattern

LAND USE PATTERN			
	Existing	First to Fifth Years	After Life of Mine
Category	Area in Hectares	Area in Hectares	Area in Hectares
Quarry	0.00	1.06	1.82ha area will be convert as water reservoir 401970cum
Haul Road	0.00	0.03	00
Proposed Crusher	0.00	0.00	00
Green belt in Safety Zone	0.00	0.52	0.52
Dump with Parapet wall & Garland drain	0.00	0.21	Top soil will be used for plantation and rest overburden shall use for haul road dressing and backfilling
Total area in use	0.00	1.82	2.34
Balance unused area	2.34	0.52	00
Balance used area	0.00	0.00	00
Total Applied Lease Area	2.34	2.34	2.34

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Place of Plantation	Spacing b/w Plants	Total No. of Plants	Area Cover in Square Meters	Total Area in Ha.	Species
1st	Safety Zone	2.5 x 2.5	832	5200	0.52	Gulmohar, Gular, Sagwan, Sakua <u>Fruit Bearing Trees</u> Mango, Jackfruit, Guava
	Haul Road	3 x 3	588	440M Approach Road 440/3=147Plants 14/x4row=588Plant		
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			1420	5200	0.52	

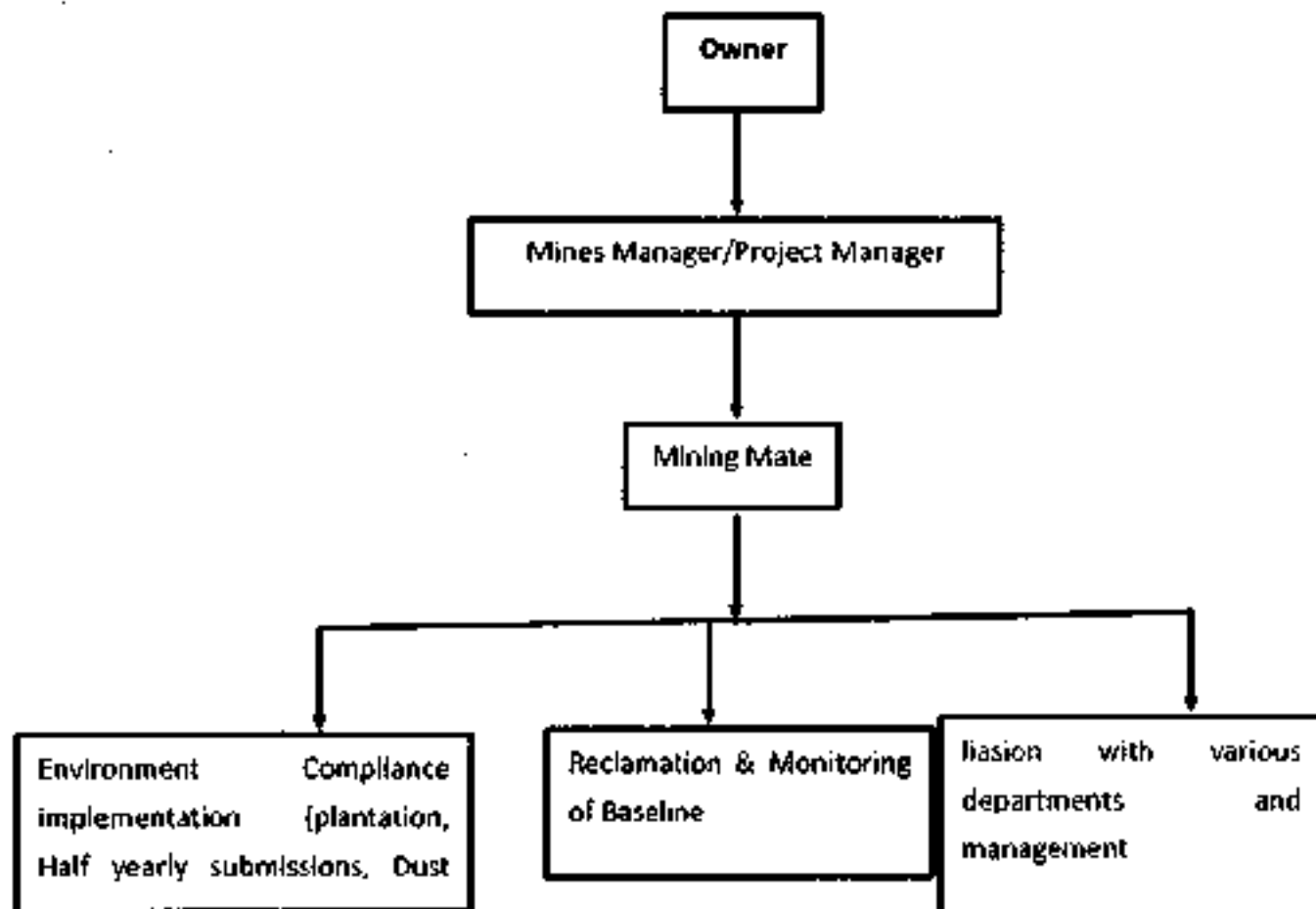
- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Budget

S.NO.	Particulars	Budget Provisions (Rs)	
		Capital	Recurring
Water Demand			
1(a)	Fixed Overhead water sprinkling system with solar pump for outgoing and incoming transportation vehicles for haul road and green belt	1,00,000	2,10,000
	Cost for 300 days for 7 KLD @5 KL tanker capacity, Rupees 500/- per tanker		
	& One dedicated tanker of 5 KL for Greenbelt Management	10,00,000	50,000
1(b)	Discharge of waste water 300 days for 0.55 KLD @5 KL tanker capacity, Rupees 2000/per tanker	0	66,000
2	Prepare & Maintenance of approach road (Max. Road length 440 m, Width 4.0 m) @ 500Rs./Meter.	2,20,000	22,000
3	Monitoring (Air, Water, Soil & Noise)	Nil	1,00,000
4	Settling tank 2 in no's (LBH 12 m* 7 m* 4 m) & Garland drains	2,00,000	30,000
5	Wire Fence 708 m x 300 /- meter	2,12,400	21,240
Plantation Scheme			
Plantation in consultation with DFO & Gram Panchayat and conversion to Grazing land as far as possible.			
6	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) 1420 No. of plants x 500 Rs.	7,10,000	2,00,000
Solid Waste Management			
7	Bins 2 Nos.	1,500	4,000
8	Transport of Dry Waste	5,000	
9	Vehicle Maintenance +PUC Certification	Nil	25,000
Total EMP Budget		22,68,900	7,28,640

Environment Monitoring Plan (post operation)

Environment management cell



FUNCTIONS OF ENVIRONMENT MONITORING CELL

- **Supervision:** Managed by Mines Manager with a qualified technical team.
- **Personnel:** Includes skilled, semi-skilled, unskilled, and other third parties.
- **Responsibilities:**
 - ✓ Implement environmental control measures.
 - ✓ Oversee reclamation planning and management.
 - ✓ Manage air and water pollution control.
 - ✓ Liaise with state and central statutory agencies.
 - ✓ Develop greenbelt areas.
- **Performance Review:** Assess corporate environmental performance and report non-compliances.
- **Remedial Actions:** Suggest and implement actions for exceeding pollution limits.
- **Coordination:**

Collect health statistics for workers and local population.

Act as a bridge for project implementation and Project Authorities

Facilitate afforestation efforts.

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Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx in the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Time Bound action Plan with Budgetary Allocation

Sl. No.	Activities as per Public Hearing	Year of Implementation & Budgets					Total
		1st Year	2nd Year	3rd Year	4th Year	5th Year	
1	Water facilities for the villagers	100000	100000	100000	100000	100000	5,00,000
2	Medical aid for poor people	50000	50000	50000	50000	50000	2,50,000

3	For water facility for the villagers (Repairing of non- functional hand pumps in the villages.)	50,000	50,000	50,000	50,000	50,000	2,50,000
4	Compensatory budget for anticipated damage to habitation	75000	75000	75000	75000	75000	3,75,000
6	Health checkup facility	50000	50000	50000	50000	50000	2,50,000
7	Money should be given for marriage, food and drink during Sohrai and other festivals in the year.	25000	25000	25000	25000	25000	125000
	Total	350000	350000	350000	350000	350000	1750000

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- The Boundary Pillars of the proposed mine lease area will be maintained properly.
- One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- If any tree felling than necessary permission shall be taken from the competent authority.
- Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.

- I. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from Injury or infection will be provided to working personnel.

Solid Waste Management

The waste encountered during the mining operation is mainly. During Plan period gritty soil removed will be dumped at northern side with suitable precaution. Some quantity of the removed gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible.

Water Quality Management

- a. Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- b. Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- c. Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- d. Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- e. Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- f. Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

- i. **Use of Sharp Drill Bits**
- ii. **Wet Drilling** – Water will be sprinkled on the site where drilling has to be done.
- iii. **Blasting** – Blasting generate gases & dust. This effect would be mitigated by following measures.
 - a. Controlled blasting would be practiced
 - b. Optimum quantity of explosives would be used.
 - c. Blasting to be done during favourable weather conditions.
- iv. **Operation of Diesel Equipment's** – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.
- v. **Loading of Product on Truck** – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.
- vi. **Movement of Trucks on Road** – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken
 - ✓ Regular water sprinkling on Haul road by using water Tankers.
 - ✓ Regular repair of Haul road
 - ✓ All Trucks carrying stone outside lease area will have PUC certificate

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard Identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

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Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection,

although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to over charging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonators shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the work place (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overtaking vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

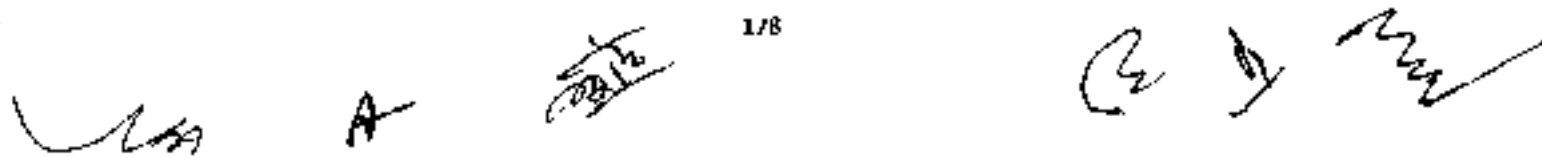
The usual method of transporting minerals from the working face is by trucks /tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.

- Navigation signs will be provided at each and every turning point up to the main road (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Tangidaha Stone Mine of M/s N.N. Stone Works (Partners : Shri Nabuit Shekh & Shri Nurmahammad Shekh), Village : Tangidaha, Thana no. : 08, Distt.: Pakur, Jharkhand (2.34 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - I) along with following specific conditions :

- I. In compliance of DM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Mo Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests. Summary findings of same to be submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.



3. Tangidaha Stone Mine of Shri Gol Mohammad Shekh], Village : Tangidaha, Thana no. : 08, Distt.: Pakur, Jharkhand (2.809 Ha).

(Proposal no.: SIA/JH/MIN/499886/2024)

Name of the consultant :Oceao-Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.

This is a new project which has been taken for appraisal on 23.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Environmental Clearance (EC) after ToR.

The State Expert Appraisal Committee, Jharkhand deliberated the project during its 115th meeting held on 23-27.07.2024 and SEIAA, Jharkhand has approved the ToRs in 115th meeting held on 06th&07thAugust, 2024. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2024-25/3204/2024/226, dated 16.08.2024.The final EIA / EMP submitted by PP to SEAC on 21.10.2024.

EC Application for: Proposed Capacity: 58,204 Cum Per Annum/ 1,57,151 Ton Per Annum

Project and Location Details:

S.No	Parameter	Details
1	Project Name	: Tangidaha Stone Mine
2	Proprietor	: Shri Gol Mohammad Shekh
3	Lessee Address	: R/O- Kismat Kadmsar, Post- Jhikarhati, District- Pakur, Jharkhand
4	Lease Area	: Ha: 2.809Ha Acres: 6.94Acres
5	Type of Land	: Raiyati Land
6	Project Cost	: 60Lakhs
7	EMP Budget	: Capital: 22.90 Lakhs Recurring: 7.69 Lakhs / year
8	New or Expansion	: New
9	Mineable Reserves	: 583483 Cum 15,75,404 Tones
10	Mine Life	: 10 Years
11	Mining Depth	: 24 m
11	Man power	: 24persons
12	Water Requirement	: Total water requirement is about 7.69 KLD= 0.69 (Drinking Water & Domestic Uses) + 3 KLD (Water sprinkling) + 4 KLD(plantation).
13	Water Source	: by Authorised hired water tankers
14	DG Set / power	: 125KVA (Temporary setup for Backup)
15	Crusher	: No
16	Nearest Water Body	: Kalupara Pond is about 0.58 km in ENEdirection.
17	Nearest Habitation	: Village Tangidahaisabout 0.39 km inWSWdirection
18	Nearest Rail Station	: Nagarbani Railway Station is about 14.5 Km In W direction.
19	Nearest Airport	: Deoghar Airport is about 104.7 Km In W direction.
20	Nearest Forest	: Ganropahari P.F. is about 7.85 km inNW direction.
21	Road & Highways	: Nearest MDR is 1 KM away from the mine site In W

		direction.

CO-ORDINATES

S.No.	Latitude	Longitude	S. No.	Latitude	Longitude
1	24° 33' 35.704" N	87° 43' 36.744" E	13	24° 33' 31.557" N	87° 43' 41.640" E
2	24° 33' 35.529" N	87° 43' 38.079" E	14	24° 33' 30.872" N	87° 43' 41.352" E
3	24° 33' 35.268" N	87° 43' 40.062" E	15	24° 33' 31.249" N	87° 43' 39.118" E
4	24° 33' 35.022" N	87° 43' 41.955" E	16	24° 33' 30.605" N	87° 43' 37.768" E
5	24° 33' 34.856" N	87° 43' 43.195" E	17	24° 33' 31.153" N	87° 43' 36.274" E
6	24° 33' 34.709" N	87° 43' 43.648" E	18	24° 33' 31.400" N	87° 43' 36.287" E
7	24° 33' 34.298" N	87° 43' 44.186" E	19	24° 33' 31.653" N	87° 43' 35.472" E
8	24° 33' 33.463" N	87° 43' 43.968" E	20	24° 33' 32.071" N	87° 43' 35.506" E
9	24° 33' 32.469" N	87° 43' 43.752" E	21	24° 33' 32.804" N	87° 43' 34.780" E
10	24° 33' 32.071" N	87° 43' 43.024" E	22	24° 33' 34.079" N	87° 43' 34.342" E
11	24° 33' 31.879" N	87° 43' 42.147" E	23	24° 33' 34.523" N	87° 43' 34.986" E
12	24° 33' 31.900" N	87° 43' 41.605" E	24	24° 33' 35.074" N	87° 43' 36.085" E

LAND DETAILS

Khata no.	Plot no.
03	79 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 937/M, dated 27.06.2024.
2	CO	:	The CO, Maheshpur vide letter no. 1196/Ra, dated 14.12.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Pakur vide memo no. 1103/M, dated 19.07.2024 certified that 08 other mining lease area (5.78 Acre, 6.00 Acre, 6.00 Acre, 6.919 Acre, 6.57 Acre, 6.41 Acre, 7.09 Acre & 6.58 Acre) exists within 500 m radius from proposed project site and total area is 58.289 Acre or 23.59 Ha.
4	DFO Wild Life	:	DFO -cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 107, dated 18.01.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide memo no. 1554, dated 16.12.2023 certified that the distance of reserved / protected forest land is 1367 meter from proposed project site.








6	DSR	:	This project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 299, Page no. 132).
7	Gram Sabha	:	BDO, Maheshpur vide letter no. 2385/Vi., dated 04.12.2023 informed that Gram Sabha conducted on 30.11.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 1104/M, dated 19.07.2024
9	Qualified Person	:	Md. Tauseel Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.
10	Public Hearing	:	Public Hearing conducted on 04.10.2024.
11	Baseline study	:	1 st March, 2024 to 31 st May, 2024.

Working Details

1	Mining Method	:	OCM & Mechanised
2	Lease Area	:	6.94 ACRES / 2.809 HA Life of Mine – 07 years
3	Waste Generation	:	5 Years- 59990CUM
4	Stripping Ratio(t/m ³)	:	1:0.04
5	Working Days	:	300
6	Bench: size & No	:	6m x 6m
7	Highest Elevation of lease Area	:	101 m Above MSL
8	Lowest Elevation of lease Area	:	97 m Above MSL
9	Ultimate Working Depth	:	73 Above MSL
10	Water Table	:	57 Above MSL
11	Topography of Mine	:	Uneven Land
12	Explosive Requirement	:	Tentative 104.78Kg/ Day
13	Diesel/Fuel requirement	:	568litres per day

Production Details

Year	Generation of Waste/O. B in cum	Production of Stone in Cum	Production of Stone in Tonnes	Grade/Uses
1st	36904	57226	154510	Construction & Road
2nd	23086	57825	156128	Construction & Road
3rd	00	58068	156784	Construction & Road
4th	00	58080	156516	Construction & Road
5th	00	58204	157151	Construction & Road
Total	59990	289403	781388	
Stripping Ratio in (m3/t)- 1:0.04				

Land Use

LAND USE PATTERN			
	Existing	First to Fifth Years	After Life of Mine
Category	Area in Hectares	Area in Hectares	Area in Hectares
Quarry	0.00	1.60	2.309 ha area will be converted as water reservoir 583483cum
Haul Road	0.00	0.03	0.00
Proposed Crusher	0.00	0.00	Crusher not proposed
Green belt in Safety Zone	0.00	0.50	0.50
Dump with Parapet wall & Garland drain	0.00	0.19	Top soil will be used for plantation and rest overburden shall use for haul road dressing and backfilling
Total area in use	0.00	2.32	2.809
Balance unused area	2.87	0.489	0
Balance used area	0.00	0.00	0
Total Applied Lease Area	2.809	2.809	2.809

ENVIRONMENT MANAGEMENT

Green Belt Development

S.No.	Location		Area/Length	No of Trees
1	Safety Zone	:	0.50 Ha	800 trees @ 1600 trees per ha
2	Other Reclaimed Area	:	NIL	NIL
3	Haul /Approach Road	:	500 m	Road length-500 m Two Row Planation= 500 m/3.0m x 3.0 m Spacing = 166.6 say 166 Plant one side in one row 166 x 2 x 2 = 664 Plants
Total				1464

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

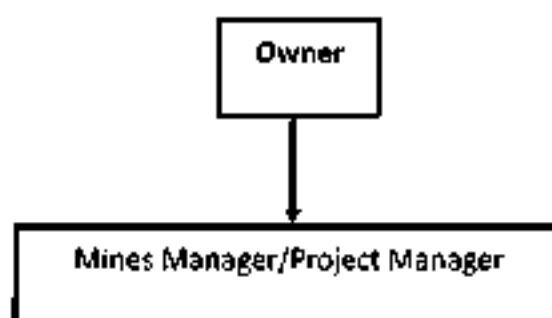
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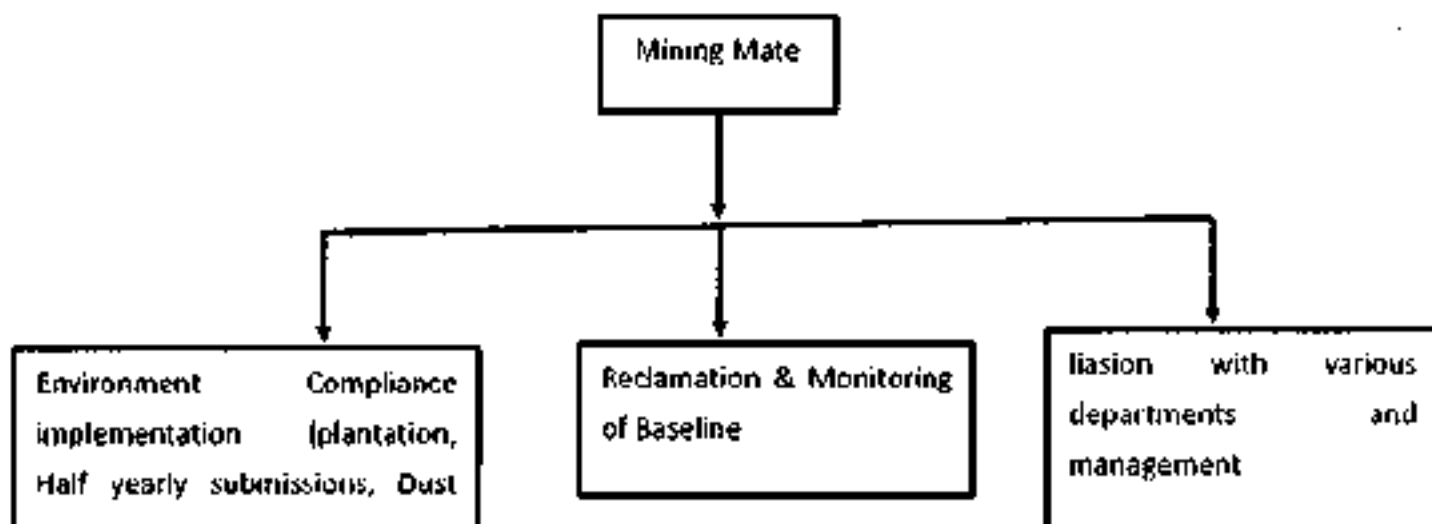
Environment Management Budget

S.NO.	Particulars	Budget Provisions (Rs)	
		Capital	Recurring
Site Facilities			
1(a)	Fixed Overhead water sprinkling system with solar pump for outgoing and incoming transportation vehicles for haul road and green belt Cost for 300 days for 7.0 KLD @5 KL tanker capacity, Rupees 500/- per tanker	1,00,000	2,10,000
	& One dedicated tanker of 5 KL for Greenbelt Management	10,00,000	50,000
1(b)	Cost of Water tanker (3000 -liter capacity) Cost for (drinking and domestic use) 300 days for 0.69 KLD @ 3 KL tanker capacity, Rupees 600/- per tanker	0	41,400
1(c)	Discharge of waste water 300 days for 0.55 KLD @5 KL tanker capacity, Rupees 2000/per tanker	0	66,000
2	Prepare & Maintenance of approach road (Max. Road length 440 m, Width 4.0 m) @ 250Rs. /Meter.	1,10,000	22,000
3	Monitoring (Air, Water, Soil & Noise)	Nil	1,00,000
4	Settling tank 2 in no's (LBH 12 m* 7 m* 4 m) & Garland drains	1,30,000	30,000
5	Wire Fence 708 m x 300 /- meter	2,12,400	21,240
Plantation Scheme			
Plantation in consultation with DFO & Gram Panchayat and conversion to Grazing land as far as possible.			
6	Green belt development safety zone 7.5mtr and along the road (for each plants including hedges and fences) 1464 No. of plants x 500 Rs.	7,32,000	2,00,000
Solid Waste Management			
7	Bins 2 Nos.	1,500	4,000
8	Transport of Dry Waste	5,000	
9	Vehicle Maintenance +PUC Certification	Nil	25,000
Total EMP Budget		22,90,900	7,69,640

Environment Monitoring Plan (post operation)

Environment management cell





FUNCTIONS OF ENVIRONMENT MONITORING CELL

- Supervision: Managed by Mines Manager with a qualified technical team.
- Personnel: Includes skilled, semi-skilled, unskilled, and other third parties.
- Responsibilities:
 - ✓ Implement environmental control measures.
 - ✓ Oversee reclamation planning and management.
 - ✓ Manage air and water pollution control.
 - ✓ Liaise with state and central statutory agencies.
 - ✓ Develop greenbelt areas.
- Performance Review: Assess corporate environmental performance and report non-compliances.
- Remedial Actions: Suggest and implement actions for exceeding pollution limits.
- Coordination:

Collect health statistics for workers and local population.

Act as a bridge for project implementation and Project Authorities

facilitate afforestation efforts.

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Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx in the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring. Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Time Bound action Plan with Budgetary Allocation

Sl. No.	Activities as per Public Hearing	Year of Implementation & Budgets					Total
		1st Year	2nd Year	3rd Year	4th Year	5th Year	
1	Water facilities for the villagers	100000	100000	100000	100000	100000	5,00000
2	Medical aid for poor people	50000	50000	50000	50000	50000	2,50,000
3	For water facility for the villagers (Repairing of non- functional hand pumps in the villages.)	50,000	50,000	50,000	50,000	50,000	2,50,000
4	Compensatory budget for anticipated damage to habitation	75000	75000	75000	75000	75000	3,75,000
6	Health checkup facility	50000	50000	50000	50000	50000	2,50,000
7	Money should be given for marriage, food and drink during Sohrai and other festivals in the year.	25000	25000	25000	25000	25000	125000

	Total	350000	350000	350000	350000	350000	1750000

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- The Boundary Pillars of the proposed mine lease area will be maintained properly.
- One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- If any tree felling than necessary permission shall be taken from the competent authority.
- Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Solid Waste Management

The waste encountered during the mining operation is mainly. During Plan period gritty soil removed will be dumped at northern side with suitable precaution. Some quantity of the removed gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.

- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

i. Use of Sharp Drill Bits

ii. Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

iii. Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced.
- Optimum quantity of explosives would be used.
- Blasting to be done during favourable weather conditions.

iv. Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

v. Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

vi. Movement of Trucks on Road – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken:

- ✓ Regular water sprinkling on Gaur road by using water Tankers.
- ✓ Regular repair of Haul road.
- ✓ All Trucks carrying stone outside lease area will have PUC certificate

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure	Very Unlikely	Minor	20

		to Dust			
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

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- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to over charging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.

- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department.

Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonators shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous

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dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the work place (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks /tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any in coming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required).

- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Tangidaha Stone Mine of Shri Gol Mohammad Shekh), Village : Tangidaha, Thana no. : 08, Distt.: Pakur, Jharkhand (2.809 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests. Summary findings of same to be submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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4. Manjhladih Stone Mine of M/s Samid Stone Works (Prop. : Shri Samid Ansari), Village : Manjhladih, Thana no. : 60, Thana : Hiranpur, Distt.: Pakur, Jharkhand (2.696 Ha).

(Proposal no.: SIA/JH/MIN/501949/2024)

Name of the consultant :Oceao-Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.

This is a new project which has been taken for appraisal on 23.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Environmental Clearance (EC) after ToR.

The State Expert Appraisal Committee, Jharkhand deliberated the project during its 115th meeting held on 23-27.07.2024 and SEIAA, Jharkhand has approved the ToRs in 115th meeting held on 06th & 07th August, 2024. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2024 25/3173/2024/225, dated 16.08.2024. The final EIA / EMP submitted by PP to SEAC on 21.10.2024.

EC Application for: 40,710 Cum Per Annum/1, 09,917 Ton Per Annum

Project and Location Details:

S. No	Parameter	Details
1	Project Name	: Manjhladih Stone Mine (M/s Samid Stone Works)
2	Proprietor	: Mr. Samid Ansari
3	Lessee Address	: R/o- Gram- Rampur, P.O.-Pakur, Thana- Pakur, District- Pakur-816107
4	Lease Area	: 2.696Ha 6.66Acres
5	Type of Land	: Raiyati Land
6	Project Cost	: 49Lakhs
7	EMP Budget	: Capital: 22.83Lakhs Recurring: 6.52Lakhs / year
8	New or Expansion	: New
9	Mineable Reserves	: 4,01,288Cum 10,83,477 Tonnes
10	Mine Life	: 10.0 Years
11	Man power	: 20persons
12	Water Requirement	: Total water requirement is about 7.6 KLD= 0.60 (Drinking Water & Domestic Uses) + 3 KLD (Water sprinkling) + 4 KLD (plantation).
13	Water Source	: by Authonsed hired water tankers
14	DG Set / power	: 125KVA (Temporary setup for Backup)
15	Crusher	: No
16	Nearest Water Body	: Torai Nadiis about 5.2 km in SW direction.
17	Nearest Habitation	: Village Manjhladihisabout 0.59 km inNEDirection
18	Nearest Rail Station	: Kotal Pakur Railway Station is about 7.02 Km in ENE direction.
19	Nearest Airport	: Deoghar Airport is about 111 Km in WSW direction.
20	Nearest Forest	: Belpahadi P.F. is about2.91 km inSW direction.

21	Road & Highways	:	NH-133A is about 4.7 km in W direction. NH-333A is about 9.7 km in WSW direction.

CO-ORDINATES

S. No.	Latitude	Longitude	S. No.	Latitude	Longitude
1	24° 43' 34.604" N	87° 45' 18.654" E	19	24° 43' 29.979" N	87° 45' 24.781" E
2	24° 43' 33.989" N	87° 45' 20.431" E	20	24° 43' 30.073" N	87° 45' 23.293" E
3	24° 43' 33.371" N	87° 45' 22.211" E	21	24° 43' 29.251" N	87° 45' 23.280" E
4	24° 43' 33.119" N	87° 45' 22.273" E	22	24° 43' 28.914" N	87° 45' 24.501" E
5	24° 43' 32.799" N	87° 45' 22.828" E	23	24° 43' 28.362" N	87° 45' 24.452" E
6	24° 43' 32.652" N	87° 45' 23.265" E	24	24° 43' 28.506" N	87° 45' 23.145" E
7	24° 43' 32.849" N	87° 45' 23.574" E	25	24° 43' 28.566" N	87° 45' 21.768" E
8	24° 43' 32.198" N	87° 45' 24.417" E	26	24° 43' 28.638" N	87° 45' 19.893" E
9	24° 43' 31.804" N	87° 45' 24.858" E	27	24° 43' 28.712" N	87° 45' 19.095" E
10	24° 43' 31.855" N	87° 45' 25.192" E	28	24° 43' 28.760" N	87° 45' 18.661" E
11	24° 43' 31.469" N	87° 45' 26.146" E	29	24° 43' 28.823" N	87° 45' 18.100" E
12	24° 43' 31.365" N	87° 45' 26.518" E	30	24° 43' 29.528" N	87° 45' 18.183" E
13	24° 43' 31.144" N	87° 45' 26.875" E	31	24° 43' 30.570" N	87° 45' 18.382" E
14	24° 43' 30.956" N	87° 45' 27.120" E	32	24° 43' 32.163" N	87° 45' 18.716" E
15	24° 43' 30.442" N	87° 45' 27.120" E	33	24° 43' 32.292" N	87° 45' 18.511" E
16	24° 43' 30.518" N	87° 45' 26.474" E	34	24° 43' 33.859" N	87° 45' 18.845" E
17	24° 43' 30.330" N	87° 45' 26.004" E	35	24° 43' 33.962" N	87° 45' 18.562" E
18	24° 43' 30.339" N	87° 45' 25.628" E			

LAND DETAILS

Khata no.	Plot no.	Khata no.	Plot no.
04	542, 553	10	549
05	543	09	550, 551
29	545 (P)	46	552 (P)
20	546	41	554, 555 (P)
16	547 (P)	38	556, 561

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 388/M, dated 19.03.2024.
2	CO	:	The CO, Hiranpur vide letter no. 474/Ra, dated 12.09.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatyan & Register II.

3	DMO	:	DMO, Pakur vide memo no. 470/M, dated 08.04.2024 certified that 02 other mining lease area (13.49 Acre & 6.66 Acre) exists within 500 m radius from proposed project site and total area is 26.96 Acre or 10.91 Ha.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1895, dated 29.09.2023 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide memo no. 1253, dated 29.09.2023 certified that the distance of reserved / protected forest land is more than 250 meter from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 487/M, dated 09.04.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 18, Page no. 118).
7	Gram Sabha	:	Gram Sabha conducted on 18.09.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 938/M, dated 27.06.2024.
9	Qualified Person	:	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.
10	Public Hearing	:	Public Hearing conducted on 08.10.2024.
11	Baseline study	:	1 st March, 2024 to 31 st May, 2024.

Working Details

1	Mining Method	:	OCM &Mechanised	
2	Lease Area	:	6.66 ACRES / 2.696 HA	Life of Mine – 10.0 years
3	Waste Generation	:	5 years–28307 CUM	
4	Stripping Ratio(t/m ³)	:	1:0.08	
5	Working Days	:	300	
6	Benchet: size & No	:	6m x 6m	
7	Highest Elevation of lease Area	:	44 Amsl	
8	Lowest Elevation of lease Area	:	42 Amsl	
9	Ultimate Working Depth	:	18 Amsl (24m)	
10	Water Table	:	7 Amsl	
11	Topography of Mine	:	Uneven Land	
12	Explosive Requirement	:	Tentative 73.14kg/day	

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13	Diesel/Fuel requirement	536Litres per day

Production Details

Year	Generation of Waste/O. B in cum	Production of Stone in Cum	Production of Stone in Tonnes	Grade/Uses
1st	11974	36573	98747	Construction & Road
2nd	8553	38979	105243	Construction & Road
3rd	00	40710	109917	Construction & Road
4th	00	39930	107811	Construction & Road
5th	7780	39798	107455	Construction & Road
Total	28307	195990	529173	

Stripping Ratio in (m³/t)- 1:0.08

Land Use

LAND USE PATTERN			
Category	Existing Area in Hectares	First to Fifth Years Area in Hectares	After Life of Mine Area in Hectares
Quarry	0.00	1.1	2.086ha area will be convert as water reservoir 401288cum
Haul Road	0.00	0.08	0.00
Proposed Crusher	0.00	0.00	0.00
Green belt in Safety Zone	0.00	0.61	0.61
Dump with Parapet wall & Garland drain	0.00	0.25	Top soil used for plantation and backfilling
Total area in use	0.00	2.04	2.696
Balance unused area	2.696	0.656	0.00
Balance used area	0.00	0.00	0.00
Total Applied Lease Area	2.696	2.696	2.696

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Place of Plantation	Spacing b/w plants	Total No. of Plants	Area Cover in Square Meters	Total Area in Ha.	Species
1st	Safety Zone	2.5 x 2.5	976	6100	0.61	Gulmohar, Gular, Shami, Sagwan, Sakua Fruit Bearing Trees E.g- Mango, Jackfruit
	Approach Road	3.0 x 3.0	266	200 Meter 266 plants two row plantation	--	
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	

4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			1242	6100	0.61	

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Budget

S NO.	Particulars	Budget Provisions (Rs)	
		Capital	Recurring
Water Demand			
1(a)	Fixed Overhead water sprinkling system with solar pump for outgoing and incoming transportation vehicles for haul road and greenbelt. Cost for 300 days for 7 KLD @5 KL tanker capacity, Rupees 500/- per tanker	1,00,000	2,10,000
	& One dedicated tanker of 5 KL for Greenbelt Management	10,00,000	
1(b)	Discharge of hired wastewater tanker 300 days for 0.48 KLD @5 KL tanker capacity, Rupees 2000/per tanker	0	57,600
2	Prepare & Maintenance of approach road (Max. Road length 200 m, Width 4.0 m) @ 500Rs. /Meter.	1,00,000	10,000
3	Monitoring (Air, Water, Soil & Noise)	Nil	1,00,000
4	Settling tank 2 in no's (LBH 12 m ² 7 m ² 4 m) & Garland drains	2,00,000	30,000
5	Wire Fence 850 m (perimeter) x 300 /- meter	2,55,000	25,500
Plantation Scheme			
Plantation in consultation with DFO & Gram Panchayat			
6	Green belt development safety zone 7.5mtr and along the road (for each plants including hedges and fences and tree guard at approach roads) 1244 No. of plants x 500 Rs.	6,22,000	2,00,000
Solid Waste Management			
7	Bins 2 Nos.	1,500	4,000

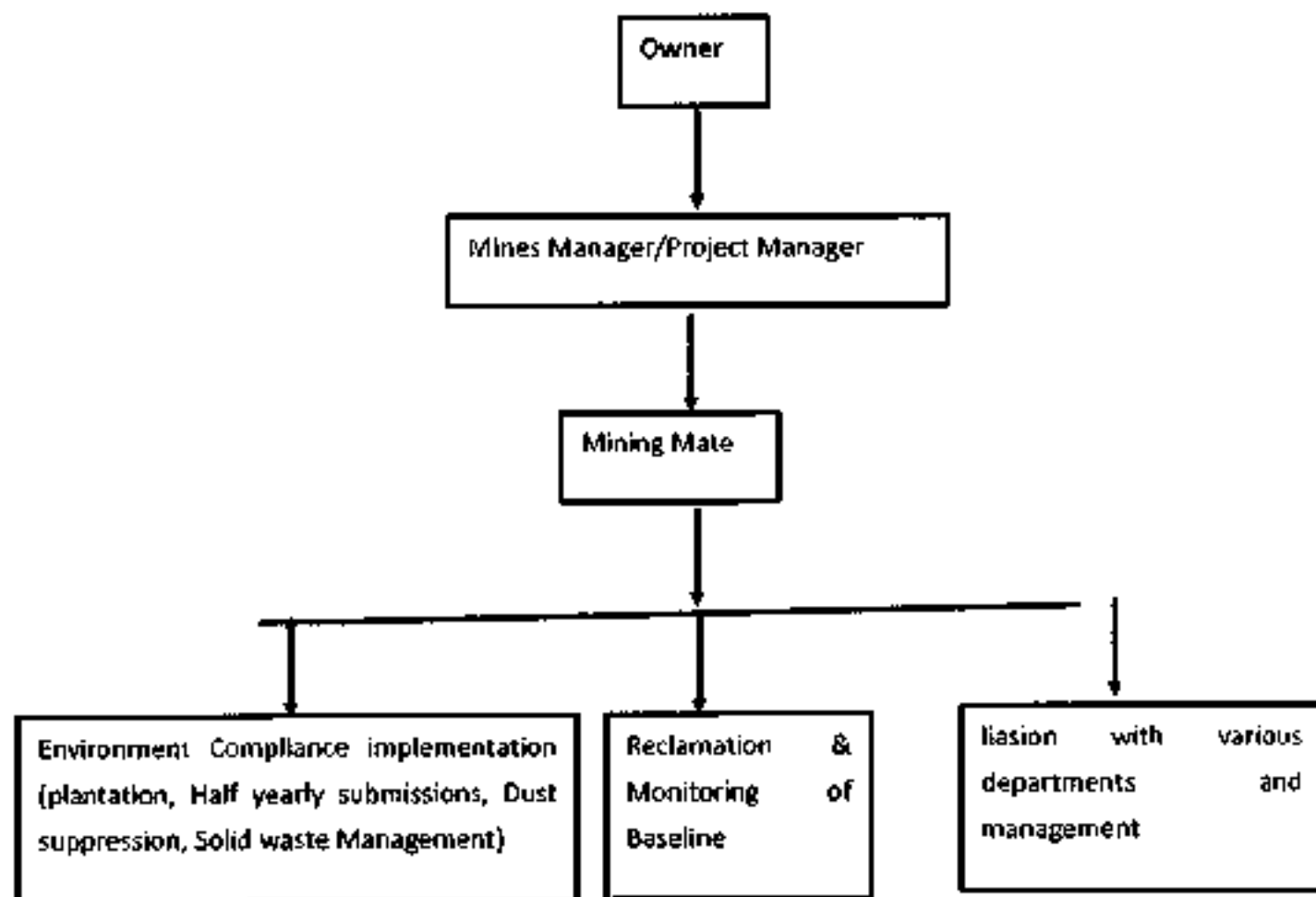
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8	Transport of Waste for disposal	5,000	
9	Vehicle Maintenance +PUC Certification	Nil	15,000
Total EMP Cost		22,83,500	6,52,100

Environment Monitoring Plan (post operation)

Environment management cell

ORGANIZATION CHART FOR ENVIRONMENT MANAGEMENT CELL



FUNCTIONS OF ENVIRONMENT MONITORING CELL

- Supervision: Managed by Mines Manager with a qualified technical team.
- Personnel: Includes skilled, semi-skilled, unskilled, and other third parties.
- Responsibilities:
 - ✓ Implement environmental control measures.
 - ✓ Oversee reclamation planning and management.
 - ✓ Manage air and water pollution control.
 - ✓ Liaise with state and central statutory agencies.
 - ✓ Develop greenbelt areas.
- Performance Review: Assess corporate environmental performance and report non-compliances.
- Remedial Actions: Suggest and implement actions for exceeding pollution limits.
- Coordination:

Collect health statistics for workers and local population.

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Act as a bridge for project implementation and Project Authorities
Facilitate afforestation efforts.

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Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx in the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Sl. No.	Activities as per Public Hearing	Year of Implementation & Budgets					Total
		1 st Year	2 nd Year	3 rd Year	4 th Year	5 th Year	
1	Monthly health check-up camp for locals and workers	60000	60000	60000	60000	60000	300000

2	Maintenance and Repairment of road	40,000	40,000	40,000	40,000	40,000	2,00,000
3	Support should be provided in marriages and appropriate compensation should be given in case of cows, bulls and villagers getting injured in an accident in a mine	50,000	50,000	50,000	50,000	50,000	2,50,000
4	Football grounds should be made for the villagers and water sprinkling should be done to prevent dust particles.	30,000	30,000	30,000	30,000	30,000	1,50,000
5	Cooperation should be provided for electricity lightning and water facilities for the villagers.	50000	50000	50000	50000	50000	2,50,000
Total		230000	230000	230000	230000	230000	11,50,000

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- The Boundary Pillars of the proposed mine lease area will be maintained properly.
- One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- If any tree felling than necessary permission shall be taken from the competent authority.
- Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.

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- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Solid Waste Management

The waste encountered during the mining operation is mainly. During Plan period gritty soil removed will be dumped at northern side with suitable precaution. Some quantity of the removed gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

i. **Use of Sharp Drill Bits**

ii. **Wet Drilling –** Water will be sprinkled on the site where drilling has to be done.

iii. **Blasting –** Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced.
- Optimum quantity of explosives would be used.
- Blasting to be done during favourable weather conditions.

iv. **Operation of Diesel Equipment's –** They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

v. **Loading of Product on Truck –** Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

vi. **Movement of Trucks on Road –** Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken:

- ✓ Regular water sprinkling on Gaur road by using water Tankers.
- ✓ Regular repair of Haul road.
- ✓ All Trucks carrying stone outside lease area will have PUC certificate

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RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily Injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

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The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to over charging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonators shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the work place (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks /tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any in coming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge

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of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Manjhladih Stone Mine of M/s Samid Stone Works (Prop. : Shri Samid Ansari), Village : Manjhladih, Thana no. : 60, Thana : Hiranpur, Distt.: Pakur, Jharkhand (2.696 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

5. Mansinghpur Stone Mine of Mr. Ansar Ali, Village : Mansinghpur, Thana no. : 103, Anchal : Hiranpur, Distt.: Pakur, Jharkhand (1.555 Ha).

(Proposal no.: SIA/JH/MIN/501256/2024)

Name of the consultant :Oceao-Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.

This is a new project which has been taken for appraisal on 23.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 18,540 Cum per Year/50,058 tonnes per Year or 61.80Cum per day/166.86 Tonnes Per day.

Project and Location Details:

S. No	Parameter	Details
1	Project Name	Mansinghpur Stone Mine of M/s Shri Ansar Ali (Proprietor), Village :Mansinghpur, Anchal : Hiranpur, Distt.: Pakur, Jharkhand (1.55 Ha).
2	Lessee/Director	Shri Ansar Ali
3	Lessee Address	Village- Jankinagar, Thana- Pakur, District- Pakur, Jharkhand
4	Lease Area	Ha: 1.555 Ha Acres: 3.842 Acres
5	Type of Land	Raiyati Land
6	Project Cost	33 Lakhs
7	EMP Budget	Capital: 27.95Lakhs Recurring: 4.5 Lakhs / year
8	New or Expansion	New

9	Mineable Reserves	:	1,65,718 Cum	4,47,438.60 Tonnes
10	Mine Life	:	09 Years	
11	Man power	:	20 persons	
12	Water Requirement	:	Total water requirement is about 7.60 KLD=0.60 KLD (Drinking & Domestic Uses) + 4.0 (Plantation) KLD + 3.0 KLD (Water Sprinkling).	
13	Water Source	:	by Authorised hired water tankers	
14	DG Set / power	:	125 KVA (Temporary setup for Backup)	
15	Crusher	:	Not Proposed	
16	Nearest Water Body	:	Mansinghpur Pond is about 0.78km in S direction.	
17	Nearest Habitation	:	Mansinghpur is about 0.17 km in ESE direction	
18	Nearest Rail Station	:	Tibhita Railway Station is about 5.71 Km in E direction. Kotalpukur Railway Station is about 6.62 Km in NE direction.	
19	Nearest Airport	:	Deoghar Airport is about 113 Km in WSW direction.	
20	Nearest Forest	:	Bahdurpur Forest	9.39 NE
		:	BagdabraShal Forest	8.4 NE
		:	Gohalbari PF	10.51 NW
		:	Dharnipahar PF	12.43 SSW
		:	Bhandaro PF	5.33 NW
21	Road & Highways	:	NH-133A is about 4.21 km in WSW direction. SH-12 is about 13.27 km in E direction.	

CO-ORDINATES

S. No.	Latitude	Longitude	S. No.	Latitude	Longitude
1	24°41'26.031"N	87°47'15.933"E	19	24°41'22.676" N	87°47'17.344" E
2	24°41'26.656" N	87°47'14.272"E	20	24°41'22.841" N	87°47'16.480" E
3	24°41'27.060" N	87°47'12.366"E	21	24°41'23.288" N	87°47'16.717" F
4	24°41'27.497" N	87°47'9.990"E	22	24°41'23.987" N	87°47'16.871" E
5	24°41'27.163" N	87°47'9.904" E	23	24°41'24.198" N	87°47'16.023" E
6	24°41'27.115" N	87°47'10.095"E	24	24°41'24.645" N	87°47'15.889" E
7	24°41'26.115" N	87°47'9.814" E	25	24°41'24.306" N	87°47'15.658" E
8	24°41'24.934" N	87°47'9.656" E	26	24°41'24.770" N	87°47'14.216" E
9	24°41'24.866" N	87°47'10.213"E	27	24°41'25.308" N	87°47'12.800" E
10	24°41'23.846" N	87°47'9.855" E	28	24°41'25.899" N	87°47'12.985" E
11	24°41'23.663" N	87°47'10.832"E	29	24°41'26.649" N	87°47'13.468" E
12	24°41'23.408" N	87°47'11.897"E	30	24°41'26.262" N	87°47'14.741" E
13	24°41'24.073" N	87°47'12.172"E	31	24°41'25.507" N	87°47'14.453" E
14	24°41'23.489" N	87°47'13.879"E	32	24°41'25.362" N	87°47'14.996" E
15	24°41'23.158" N	87°47'14.848"E	33	24°41'25.644" N	87°47'15.165" E
16	24°41'22.785" N	87°47'15.939"E	34	24°41'25.598" N	87°47'15.437" E
17	24°41'22.563" N	87°47'15.966"E	35	24°41'25.758" N	87°47'15.871" E
18	24°41'22.245" N	87°47'17.205"E			

LAND DETAILS

Khata no.	Plot no.
38	1172, 1173, 1174, 1175, 1176(P), 1180, 1181, 1182, 1183, 1188, 1220, 1221, 1222
62	1211, 1212, 1213, 1214, 1215
29	1165, 1216, 1217, 1223, 1224, 1225, 1226, 1245, 1264(P), 1265(P)
61	1227, 1228, 1229, 1230, 1231
06	1232
11	1234, 1235, 1236, 1237, 1238, 1239, 1240, 1241
21	1242

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 1627/M, dated 26.09.2024.
2	CO	:	The CO, Hiranpur vide letter no. 146/Ra., dated 16.03.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II and also mentioned that the habitation of 32 houses at a distance of 370meters of proposed project site, accordingly PAs has submitted EMP for the same.
3	DMO	:	DMO, Pakur vide memo no. 1635/M, dated 28.09.2024 certified that 01 other mining lease area (2.63 Acre) exists within 500 meters radius from proposed project site and total area is 6.47 Acre or 2.62 Ha.
4	DFO Wild Life	:	DFO -cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2269, dated 18.09.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide letter no. 603, dated 18.04.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 1636/M, dated 28.09.2024 that this project is mentioned in approved DSR of

		Pakur District as a potential area (Sl. no. 45, Page no. 119).
7	Gram Sabha	BDO, Hiranpur vide letter no. 646/Vi. Dated 16.07.2024 and letter no. 329/Vi, dated 14.03.2024 informed that Gram Sabha conducted on 13.07.2024.
8	Mine Plan Approval	Approved by District Mining Officer, Pakur vide Memo No. 1775/M, dated 16.10.2024.
9	Qualified Person	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	OCM & Semi-Mechanised	
2	Lease Area	:	3.84 ACRES / 1.555 HA	Life of Mine – 09 years
3	Waste Generation	:	5 years– 19,944	
4	Stripping Ratio(t/m ³)	:	1:0.11	
5	Working Days	:	300	
6	Bench: size & No	:	6m x 6m	
7	Highest Elevation of lease Area	:	37 MSL	
8	Lowest Elevation of lease Area	:	35 MSL	
9	Ultimate Working Depth	:	07 MSL	
10	Water Table	:	02 MSL	
11	Topography of Mine	:	almost flat land with hillocks	
12	Explosive Requirement	:	42.52kg	
13	Diesel/Fuel requirement	:	440 Litres per day	

Production Details

Year	Generation of Waste/O. B in cum	Production of Stone in Cum	Production of Stone in Tonnes	Grade/Uses
1st	9936.00	10008.00	27021.60	Construction & Road
2nd	10008.00	10152.00	27410.40	Construction & Road
3rd	0.00	12600.00	34020.00	Construction & Road
4th	0.00	18540.00	50058.00	Construction &

				Road
5th	0.00	12600.00	34020.00	Construction & Road
Total	19944.00	63900.00	172530.00	
Maximum production proposed in- 18540 Cum/ 50058 Tonnes				
Stripping Ratio in (t/m ³)- 1:0.11				

Land Use

LAND USE PATTERN			
Category	Existing Area in Hectares	First to Fifth Years Area in Hectares	After Life of Mine Area in Hectares
Quarry	0.00	0.596	0.936(converted into water reservoir)
Haul Road	0.00	0.010	0.00
Proposed Crusher	0.00	0.00	0.00
Green belt in Safety Barrier	0.00	0.619	0.619
Dump with Parapet wall & Garland drain	0.00	0.18	Top soil will be used for plantation in first year and rest OB will be used road dressing and Backfilling
Total area in use	0.00	1.405	1.555
Balance unused area	1.555	0.150	0.00
Balance used area	0.00	0.00	0.00
Total Applied Lease Area	1.555	1.555	1.555

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Place of Plantation	Spacing b/w plants	Total No. of Plants	Area Cover in Square Meters	Total Area in Ha.	Species
1st	Safety Zone	2.5 x 2.5	990	6190	0.619	Peepal, Bargad, Neem, Plas, Mahua <u>Fruit Bearing Trees</u> Mango, Jackfruit, Guava
	Haul Road	3 x 3	600	450M Approach 450Meter Approach Rd. Two row both side 450/3=150*4=600Plants		
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care &	---	---	---	---	

	Protection					
Total			1590	6190	0.619	

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

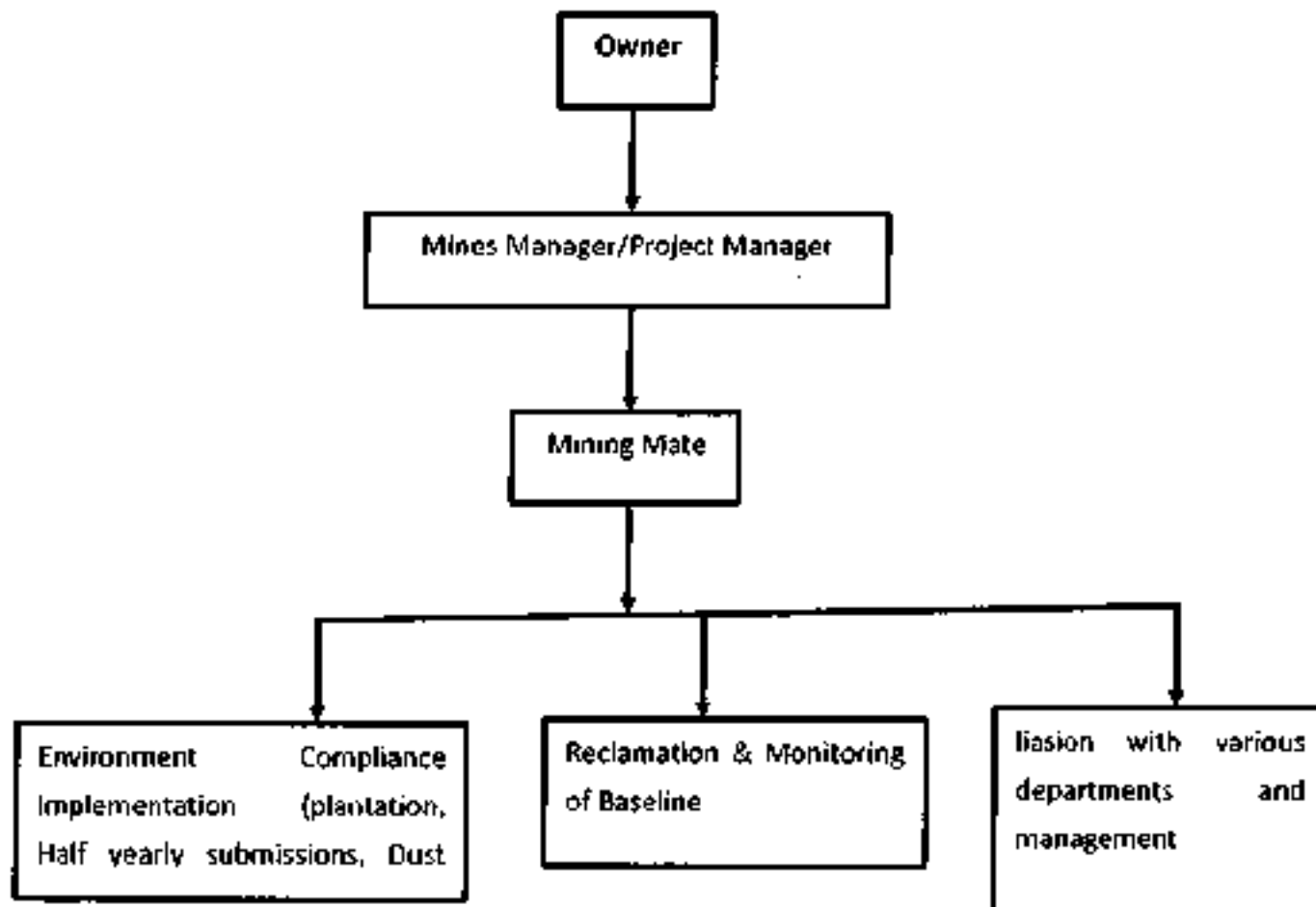
Environment Management Budget

PROPOSED FOR ENVIRONMENT MANAGEMENT COST						
S. No.	Mitigative measures to protect Environment	Criteria Pollutants	Capital Cost (In Lakh)	Recurring cost (In Lakh)	Implementation Responsibility	Frequency and Method
1.	Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine) One Water Tanker	Dust (PM 10 & PM 2.5)	19.5	1.9	Mining Mate supervised by Mine Manager	Daily Basis/Requirement Basis Register/Log book
	Solid waste management	Municipal Solid by workers	0.5	0.1		Record maintain & coordination with vendors
2.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @No. of plants 1590 x 500Rs.	No2, So2 & CO reduction Noise reduction	7.96	1.5	Mining Mate supervised by Mine Manager	Care taking@twice a week, Tree Inventory,
3.	Environment Monitoring (Air, Water, Noise& Soil Monitoring)	Deviation in Baseline	Nil	1.0	Out source to NABL Accredited Lab-Monitored by Mine Manager	Mine Manager Review of base line as per monitoring plan proposed
	TOTAL		27.95	4.5		

Blasting EMP

Blasting			
	Training and Awareness of personnel during Blasting operations	50,000	0
	Provision of safe distance from the Project site for the settlements		
	▪ Blasting shelters and Sirens	50,000	5,000
	▪ Portable Drop Arm Barrier	2,00,000	10,000
Total cost		3,00,000	15,000

ORGANIZATION CHART FOR ENVIRONMENT MANAGEMENT CELL



FUNCTIONS OF ENVIRONMENT MONITORING CELL

- Supervision: Managed by Mines Manager with a qualified technical team.
- Personnel: Includes skilled, semi-skilled, unskilled, and other third parties.
- Responsibilities:
 - ✓ Implement environmental control measures.
 - ✓ Oversee reclamation planning and management.
 - ✓ Manage air and water pollution control.

- ✓ Liaise with state and central statutory agencies.
- ✓ Develop greenbelt areas.
- Performance Review: Assess corporate environmental performance and report non-compliances.
- Remedial Actions: Suggest and implement actions for exceeding pollution limits.
- Coordination:

Collect health statistics for workers and local population.

Act as a bridge for project Implementation and Project Authorities

Facilitate afforestation efforts

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx In the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.

- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Solid Waste Management

The waste encountered during the mining operation is mainly. During Plan period gritty soil removed will be dumped at northern side with suitable precaution. Some quantity of the removed gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

i. Use of Sharp Drill Bits

ii. Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

iii. Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced.
- Optimum quantity of explosives would be used.

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- Blasting to be done during favourable weather conditions.

iv. **Operation of Diesel Equipment's** – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

v. **Loading of Product on Truck** – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

vi. **Movement of Trucks on Road** – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken:

- Regular water sprinkling on Haul road by using water tankers.
- Regular repair of Haul road.
- All Trucks carrying stone outside lease area will have PUC certificate

RISK ASSESSMENT

The hazard Identification and risk analysis are done using qualitative method:

Hazard identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hlt by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily Injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be

workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to over charging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

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Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonators shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the work place (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers

- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks /tippers /dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any in coming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Mansinghpur Stone Mine of Mr. Ansar Ali, Village : Mansinghpur, Thana no. : 103, Anchal : Hiranpur, Distt.: Pakur, Jharkhand (1.555 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Mo Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines

owner of the respective leases to complete the plantation and maintenance in a time bound manner.

- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests. Summary findings of same to be submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

6. Kalajhor Stone Mine of M/s Kabatullah Shekh, Village : Kalajhor, Thana no. : 30, Distt.: Pakur, Jharkhand (2.834 Ha).

(Proposal no.: SIA/JH/MIN/501306/2024)

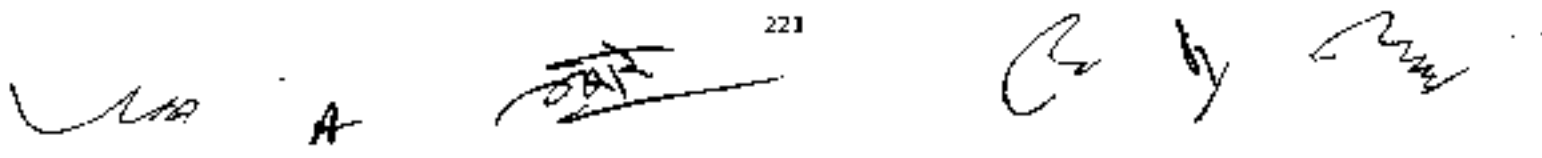
Name of the consultant : Oceao-Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.

This is a new project which has been taken for appraisal on 23.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 39,600 Cum per Year/1,06,920 tonnes per Year or 61.80 Cum per day/166.86 Tonnes Per day.



Project and Location Details:

S. No	Parameter	Details
1	Project Name	: Kalajhor Stone Mine of M/s Kabatullah Shekh
2	Lessee/ Director	: Shri Kabotullah Shekh
3	Lessee Address	: Village & Post- Jhikarhatl, Thana- Pakur, District- Pakur, Jharkhand
4	Lease Area	: Ha: 2.83 Ha Acres: 7.0 Acres
5	Type of Land	: Raiyati Land
6	Project Cost	: 37 Lakhs
7	EMP Budget	: Capital: 48.46 Lakhs Recurring: 6.6 Lakhs / year
8	New or Expansion	: New
9	Mineable Reserves	: 3,97,465 Cum 1,073,155.Tonnes
10	Mine Life	: 10 Years
11	Man power	: 22 persons
12	Water Requirement	: Total water requirement is about 7.66 KLD = 0.66 KLD (Drinking & Domestic Uses) + 4.0 (Plantation) KLD + 3.0 KLD (Dust Suppression).
13	Water Source	: The drinking water will be available from nearby village by tractor tank manually by labors at the site.
14	DG Set / power	: 125 KVA (Temporary setup for Backup)
15	Crusher	: Not Proposed
16	Nearest Water Body	: Dhanomara Village Pond is about 1.58 km in WSW direction. Ranipur River(Pargana Nadi) is about 9.84 km in N direction.
17	Nearest Habitation	: Kalajhor is about 0.20 km in NNE direction
18	Nearest Rail Station	: Pakur Railway station, Pakur is about 17.52 km in E direction.
19	Nearest Airport	: Deoghar Airport is about 101.15 km in W direction.
20	Nearest Forest	Protected Forest 0.84 N
		Protected Forest 0.96 SSW
		Protected Forest 1.08 ESE
21	Road & Highways	: Nearest SH-18 is 9.30 KM away from the mine site in NE direction. Nearest NH -133A is 9.28 KM away from the mine site in NE direction.

CO-ORDINATES

S. No.	Latitude	Longitude	S. No.	Latitude	Longitude
1	24°35'51.015"N	87°41'10.095"E	13	24°35'45.674"N	87°41'14.533"E
2	24°35'49.936"N	87°41'9.855"E	14	24°35'46.390"N	87°41'14.563"E
3	24°35'48.411"N	87°41'9.393"E	15	24°35'47.332"N	87°41'13.197"E

4	24°35'47.168"N	87°41'11.030"E	16	24°35'47.366"N	87°41'13.874"E
5	24°35'45.832"N	87°41'10.694"E	17	24°35'48.859"N	87°41'14.523"E
6	24°35'45.873"N	87°41'10.081"E	18	24°35'49.757"N	87°41'15.119"E
7	24°35'44.470"N	87°41'9.336"E	19	24°35'49.229"N	87°41'16.031"E
8	24°35'44.027"N	87°41'10.430"E	20	24°35'49.291"N	87°41'16.880"E
9	24°35'43.448"N	87°41'11.897"E	21	24°35'49.469"N	87°41'18.237"E
10	24°35'44.217"N	87°41'13.035"E	22	24°35'50.604"N	87°41'18.490"E
11	24°35'44.807"N	87°41'12.421"E	23	24°35'50.844"N	87°41'15.132"E
12	24°35'45.537"N	87°41'12.893"E	24	24°35'50.937"N	87°41'12.400"E

LAND DETAILS

Khata no.	Plot no.
10	954 & 957
13	956
23	931 (P)
28	955
33	953 & 950 (P)
44	930 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 1584/M, dated 24.09.2024.
2	CO	:	The CO, Hiranpur vide letter no. 538/Ra., dated 25.10.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jharl" in R.S. Khatriyan & Register II and also mentioned that the habitation of 13 houses at a distance of 350 meters of proposed project site, accordingly PAs has submitted EMP for the same.
3	DMO	:	DMO, Pakur vide memo no. 1617/M, dated 26.09.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO -cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1305, dated 28.06.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide letter no. 1532, dated 08.12.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.

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6	DSR	:	The DMO, Pakur has been certified vide memo no. 1616/M, dated 26.09.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 119, Page no. 119).
7	Gram Sabha	:	BDO, Hiranpur vide memo no. 1133/Vi. Dated 20.10.2023 informed that Gram Sabha conducted on 25.10.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 1787/M. dated 17.10.2024.
9	Qualified Person	:	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

WORKING DETAILS

1	Mining Method	:	OCM & Semi-Mechanised
2	Lease Area	:	7.00 ACRES / 2.834 HA Life of Mine - 10 years
3	Waste Generation	:	5 years-41200.00
4	Stripping Ratio(t/m ³)	:	1:0.07
5	Working Days	:	300
6	Bench: size & No	:	6m x 6m
7	Highest Elevation of lease Area	:	87 MSL
8	Lowest Elevation of lease Area	:	83 MSL
9	Ultimate Working Depth	:	51 MSL
10	Water Table	:	37 MSL
11	Topography of Mine	:	almost flat land with hillocks
12	Explosive Requirement	:	88.86 kg
13	Diesel/Fuel requirement	:	492 Litres per day

PRODUCTION DETAILS

Year	Generation of Waste/O. B in cum	Production of Stone in Cum	Production of Stone in Tonnes	Grade/Uses
1st	15700.00	39100.00	105570.00	Construction & Road
2nd	18800.00	39000.00	105300.00	Construction & Road
3rd	0.00	39600.00	106920.00	Construction & Road
4th	0.00	39500.00	106650.00	Construction & Road
5th	6700.00	39600.00	106920.00	Construction & Road
Total	41200.00	196800.00	531360.00	
Maximum production proposed in- 39600Cum/106920Ton				
Stripping Ration in (t/m3)- 1:0.07				

LAND USE

Land Use Pattern			
	Existing	First to Fifth Years	After Life of Mine
Category	Area in Hectares	Area in Hectares	Area in Hectares
Quarry	0	0.857	2.11 (0.26ha Backfilled and proposed for plantation, 1.85ha converted into water reservoir)
Haul Road	0.00	0.010	0.00
Proposed Crusher	0	0	Crusher not proposed
Green belt in Safety Zone	0	0.724	0.724
Dump with Parapet wall & Garland drain	0	0.200	Top soil will be used for plantation in first year and rest OB will be used road dressing and Backfilling
Total area in use	0	1.791	2.834
Balance unused area	2.46	1.043	0.00
Balance used area	0	0	0.00
Total Applied Lease Area	2.834	2.834	2.834

ENVIRONMENT MANAGEMENT**Green Belt Development**

Year	Place of Plantation	Spacing b/w plants	Total No. of Plants	Area Cover in Square Meters	Total Area in Ha.	Species
1st	Safety Zone	2.5 x 2.5	1160	7240	0.72	Gulmohar, Gular, Sagwan, Fruit Bearing Trees Mango, Jack fruit, Guava
	Haul Road	3 x 3	532	400M Approach Road 400/3=133Plants 133x4row532Plants	---	
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			1692	7240	0.72	








- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Budget

PROPOSED FOR ENVIRONMENT MANAGEMENT COST						
S. No.	Mitigative measures to protect Environment	Criteria Pollutants	Capital Cost (In Lakh)	Recurring cost (In Lakh)	Implementation Responsibility	Frequency and Method
1.	Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine) One Water Tanker	Dust (PM 10 & PM 2.5)	35.5	2.9	Mining Mate supervised by Mine Manager	Daily Basis/Requirement Basis Register/Log book
	Solid waste management	Municipal Solid by workers	0.5	0.1		Record maintain & coordination with vendors
2.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @No. of plants 1552 x 500Rs.	No2, So2 & CO reduction Noise reduction	8.46	2.0	Mining Mate supervised by Mine Manager	Care taking@twice a week, Tree Inventory,
3.	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	Deviation in Baseline	Nil	1.6	Out source to NABL Accredited Lab-Monitored by Mine Manager	Mine Manager Review of base line as per monitoring plan proposed
	TOTAL		48.46	6.6		

Blasting EMP

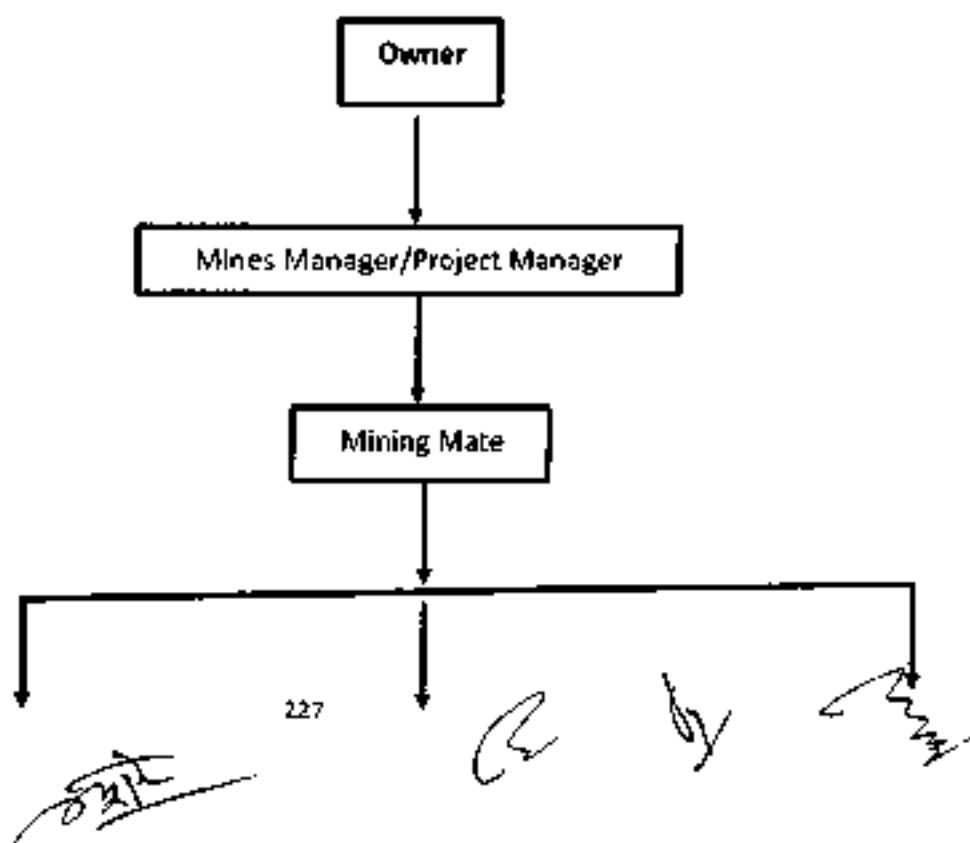
Blasting			
	Training and Awareness of personnel during Blasting operations	50,000	0
	Provision of safe distance from the Project site for the settlements		
	• Blasting shelters and Sirens	50,000	5,000
	• Portable Drop Arm Barrier	2,00,000	10,000
Total cost		3,00,000	15,000

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx In the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

ORGANIZATION CHART FOR ENVIRONMENT MANAGEMENT CELL



Environment Compliance
implementation (plantation,
Half yearly submissions, Dust

Reclamation & Monitoring
of Baseline

liaison with
various
departments and

MONITORING CELL

- Supervision: Managed by Mines Manager with a qualified technical team.
- Personnel: Includes skilled, semi-skilled, unskilled, and other third parties.
- Responsibilities:
 - ✓ Implement environmental control measures.
 - ✓ Oversee reclamation planning and management.
 - ✓ Manage air and water pollution control.
 - ✓ Liaise with state and central statutory agencies.
 - ✓ Develop greenbelt areas.
- Performance Review: Assess corporate environmental performance and report non-compliances.
- Remedial Actions: Suggest and implement actions for exceeding pollution limits.
- Coordination:

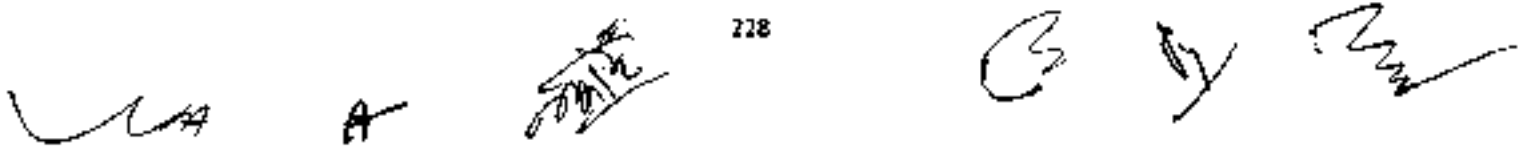
Collect health statistics for workers and local population.

Act as a bridge for project implementation and Project Authorities

Facilitate afforestation efforts.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.



- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Solid Waste Management

The waste encountered during the mining operation is mainly. During Plan period gritty soil removed will be dumped at northern side with suitable precaution. Some quantity of the removed gritty soil would also be used for road dressing and plantation. After conceptual period de stoned area of quarry will be reclaimed to the extent possible.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

i. Use of Sharp Drill Bits

ii. Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

iii. Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced.
- Optimum quantity of explosives would be used.
- Blasting to be done during favourable weather conditions

iv. Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

v. Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

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vi. **Movement of Trucks on Road** – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken:

- Regular water sprinkling on Gaur road by using water Tankers.
- Regular repair of Haul road.
- All Trucks carrying stone outside lease area will have PUC certificate

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard Identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).

- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.

- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to over charging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

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- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department.

Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonators shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the work place (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

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The usual method of transporting minerals from the working face is by trucks /tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any in coming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the mainroad (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Kalajhor Stone Mine of M/s Kabatuliah Shekh, Village : Kalajhor, Thana no. : 30, Distt.: Pakur, Jharkhand (2.834 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety

- zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
 - V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests. Summary findings of same to be submitted along with 6 monthly compliance.
 - VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
 - VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
 - VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

7. Arjundaha Stone Mine of Shri Gobinda Mondal, Village : Arjundaha, Thana no. : 324, Thana : Maheshpur, Distt.: Pakur, Jharkhand (2.03 Ha).

(Proposal no.: SIA/JH/MIN/502133/2024)

Name of the consultant : Oceao-Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.

This is a new project which has been taken for appraisal on 23.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 38,936 Cum per Year/1,05,127.20 tonnes per Year or 129.79 Cum per day/350.43 Tonnes Per day.

Project and Location Details:

S. No	Parameter		Details
1	Project Name	:	Arjundaha Stone Mine
2	Lessee/ Director	:	Shri Gobinda Mondal
3	Lessee Address	:	Village- Nashipur, Post- Bhabanadapur, Thana-

			Nalhati, District- Birbhum, West Bengal.		
4	Lease Area	:	Ha: 2.03 Ha	Acres: 5.02 Acres	
5	Type of Land	:	Raiyati Land		
6	Project Cost	:	42 Lakhs		
7	EMP Budget	:	Capital: 29.66 Lakhs	Recurring: 5.7 Lakhs / year	
8	New or Expansion	:	New		
9	Mineable Reserves	:	3,73,136 Cum	10,07,467 Tonnes	
10	Mine Life	:	10 Years		
11	Man power	:	22 persons		
12	Water Requirement	:	Total water requirement is about 7.66 KLD= 0.66 (Drinking Water & Domestic Uses) + 3 KLD (Water sprinkling) + 4 KLD (plantation).		
13	Water Source	:	by Authorised hired water tankers		
14	DG Set / power	:	125 KVA (Temporary setup for Backup)		
15	Crusher	:	Not Proposed		
16	Nearest Water Body	:	Arjundaha Pond is about 0.27 km in NNW direction.		
17	Nearest Habitation	:	Arjundaha Village is about 0.31 km in NNW direction.		
18	Nearest Rail Station	:	Chatra Railway Station is about 10.46 Km in ENE direction.		
19	Nearest Airport	:	Sido Kanhu Airport is about 49.52 Km in WSW direction.		
20	Nearest Forest	:	Beldanga & Saldanga P.F.	4.55	ESF
			Sultanpur P.F.	5.70	ENE
			Salpani P.F.	3.26	WNW
21	Road & Highways	:	Nalhati- Pakuria Road is about 3.67 km in SSE direction.		

CO-ORDINATES

PILLARS NO.	LATITUDE	LONGITUDE
1	24° 21' 7.459" N	87° 44' 53.756" E
2	24° 21' 8.915" N	87° 44' 52.888" E
3	24° 21' 9.369" N	87° 44' 53.799" E
4	24° 21' 10.147" N	87° 44' 54.052" E
5	24° 21' 10.671" N	87° 44' 54.201" E
6	24° 21' 11.459" N	87° 44' 54.064" E
7	24° 21' 10.987" N	87° 44' 52.969" E
8	24° 21' 10.478" N	87° 44' 51.554" E
9	24° 21' 10.037" N	87° 44' 50.543" E
10	24° 21' 9.874" N	87° 44' 59.430" E

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11	24° 21' 9.105" N	87° 44' 49.408" E
12	24° 21' 9.341" N	87° 44' 47.984" E
13	24° 21' 9.552" N	87° 44' 46.709" E
14	24° 21' 9.165" N	87° 44' 45.999" E
15	24° 21' 8.360" N	87° 44' 45.657" E
16	24° 21' 8.020" N	87° 44' 46.790" E
17	24° 21' 7.863" N	87° 44' 48.252" E
18	24° 21' 7.529" N	87° 44' 49.546" E
19	24° 21' 6.872" N	87° 44' 49.337" E

LAND DETAILS

Khata no.	Plot no.
19	551 (P)
28	545, 546, 547, 548 & 549 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LOI) has been issued by District Mining Officer, Pakur vide memo no. 1714/M, dated 09.10.2024.
2	CO	:	The CO, Maheshpur vide letter no. 176/Ra., dated 04.03.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatyan & Register II and also mentioned that the habitation of 16-18 houses at a distance of 290 meters of proposed project site, accordingly PAs has submitted EMP for the same.
3	DMO	:	DMO, Pakur vide memo no. 1816/M, dated 19.10.2024 certified that 01 other mining lease area (2.00 Acre) and Loi (3.24 Acre) exists within 500 meters radius from proposed project site and total area is 10.26 Acre or 4.15 Ha.
4	DFO Wild Life	:	DFO -cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 761, dated 13.04.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide letter no. 388, dated 05.03.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site
6	DSR	:	The DMO, Pakur has been certified vide memo no. 1817/M, dated 19.10.2024 that this project is mentioned in approved DSR of

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		Pakur District as a potential area (Sl. no. 14, Page no. 129).
7	Gram Sabha	BDO, Maheshpur vide letter no. 100/Vi. Dated 18.01.2024 informed that Gram Sabha conducted on 03.01.2024.
8	Mine Plan Approval	Approved by District Mining Officer, Pakur vide Memo No. 1821/M, dated 19.10.2024.
9	Qualified Person	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	: OCM & Semi-Mechanised
2	Lease Area	: 2.03ACRES / 5.02 HA Life of Mine - 10 years
3	Waste Generation	: 5 years- 21344
4	Stripping Ratio(t/m ³)	: 1:0.06
5	Working Days	: 300
6	Bench: size & No	: 6m x 6m
7	Highest Elevation of lease Area	: 62 MSL
8	Lowest Elevation of lease Area	: 58 MSL
9	Ultimate Working Depth	: 22 MSL
10	Water Table	: 10 MSL
11	Topography of Mine	: almost flat land with hillocks
12	Explosive Requirement	: 87.59 Kg
13	Diesel/Fuel requirement	: 440 litres per day

Production Details

Year	Generation of Waste/O. B in cum	Production of Stone in Cum	Production of Stone in Tonnes	Grade/Uses
1st	21344.00	37260.00	100602.00	Construction & Road
2nd	0.00	37720.00	101844.00	Construction & Road
3rd	0.00	38236.00	103237.20	Construction & Road
4th	0.00	37536.00	101347.20	Construction & Road
5th	0.00	38936.00	105127.20	Construction & Road
Total	21344.00	189688.00	512157.60	
Maximum production proposed in- 38936 Cum Per Annum/ 105127.20 Ton Per				
Stripping Ratio in (t/m ³)- 1:0.04				

Land Use

LAND USE PATTERN			
	Existing	First to Fifth Years	After Life of Mine
Category	Area in Hectares	Area in Hectares	Area in Hectares
Quarry	0.503	1.070	1.490(0.224ha Backfilled and used for plantation,1.266 converted in to water reservoir)
Haul Road	0.00	0.005	0.00
Proposed Crusher	0.00	0.00	0.00
Green belt in Safety Barrier	0.00	0.540	0.540
Dump with Parapet wall & Garland drain	0.00	0.170	Top soil will be used for plantation in first year and rest OD will be used road dressing and Backfilling
Total area in use	0.503	1.785	2.03
Balance unused area	1.527	0.245	0.00
Balance used area	0.00	0.00	0.00
Total Applied Lease Area	2.03	2.03	2.03

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Place of Plantation	Spacing b/w plants	Total No. of Plants	Area Cover in Square Meters	Total Area in Ha.	Species
1st	Safety Zone	2.5 x 2.5	864	5400	0.54	Gulmohar, Gular, Sagwan, Sakua <u>Fruit Bearing Trees</u> Mango, Jackfruit, Guava
	Haul Road	3.0 x 3.0	1068	800M Approach Road 800/3=267Plants 100x4row=1068 Plant		
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	

Total		1932	5400	0.54	

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Budget

PROPOSED FOR ENVIRONMENT MANAGEMENT COST						
S. No.	Mitigative measures to protect Environment	Criteria Pollutants	Capital Cost (In Lakh)	Recurring cost (In Lakh)	Implementation Responsibility	Frequency and Method
1.	Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine) One Water Tanker	Dust (PM 10 & PM 2.5)	19.5	2.4	Mining Mate supervised by Mine Manager	Daily Basis/Requirement Basis Register/Log book
	Solid waste management	Municipal Solid by workers	0.5	0.1		Record maintain & coordination with vendors
2.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @No. of plants 938 x 500Rs.	No2,So2 & CO reduction Noise reduction	9.66	2.0	Mining Mate supervised by Mine Manager	Care taking@twice a week, Tree Inventory,
3.	Environment Monitoring (Air, Water, Noise& Soil Monitoring)	Deviation in Baseline	Nil	1.20	Out source to NABL Accredited Lab. Monitored by Mine Manager	Mine Manager Review of base line as per monitoring plan proposed
	TOTAL		27.95	4.5		

Blasting Budget

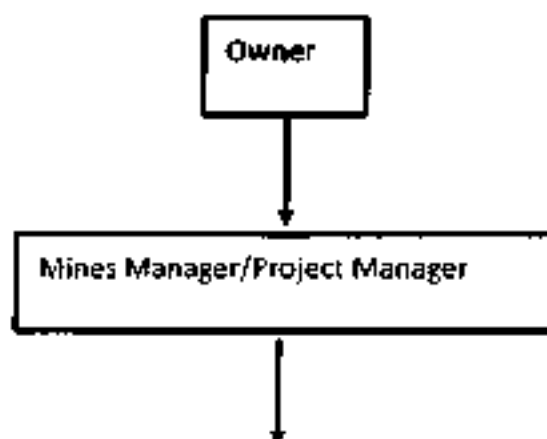
Blasting		
Training and Awareness of personnel during Blasting operations	50,000	0
Provision of safe distance from the Project site for the settlements		
Blasting shelters and sirens	50,000	5,000
Portable Drop Arm Barrier	2,00,000	10,000
Total cost	3,00,000	15,000

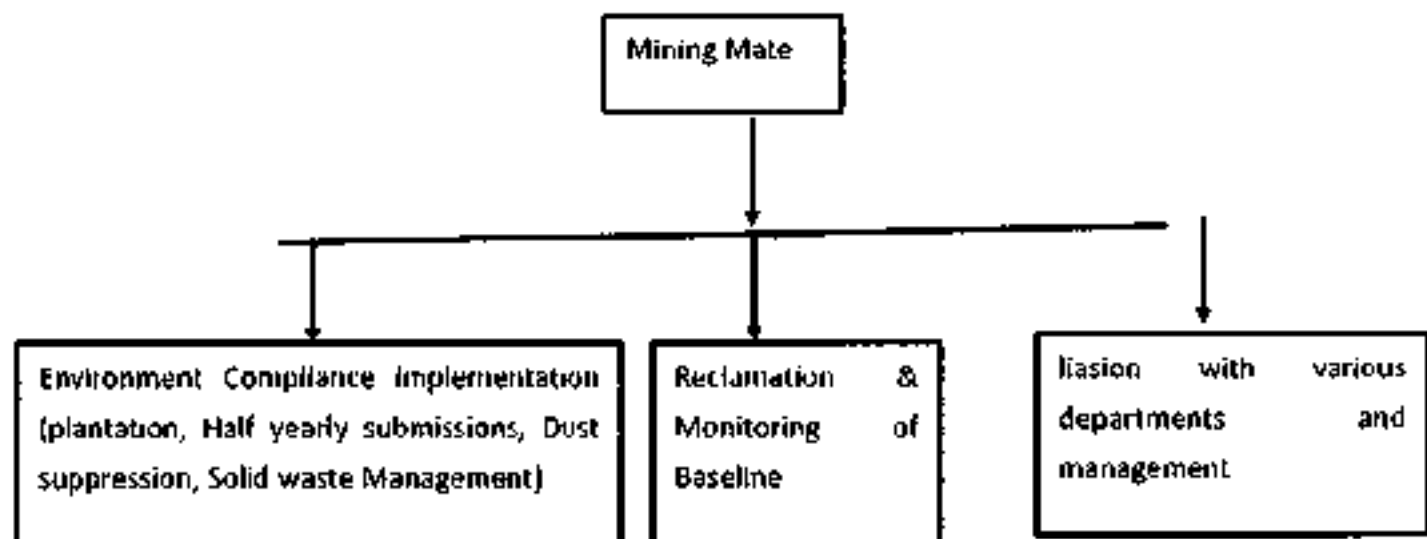
Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx In the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

ORGANIZATION CHART FOR ENVIRONMENT MANAGEMENT CELL





FUNCTIONS OF ENVIRONMENT MONITORING CELL

Supervision: Managed by Mines Manager with a qualified technical team.

Personnel: Includes skilled, semi-skilled, unskilled, and other third parties.

Responsibilities:

- ❖ Implement environmental control measures.
- ❖ Oversee reclamation planning and management.
- ❖ Manage air and water pollution control.
- ❖ Liaise with state and central statutory agencies.
- ❖ Develop greenbelt areas.

Performance Review: Assess corporate environmental performance and report non-compliances.

Remedial Actions: Suggest and implement actions for exceeding pollution limits.

Coordination:

Collect health statistics for workers and local population.

Act as a bridge for project Implementation and Project Authorities

Facilitate afforestation efforts.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.

- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Solid Waste Management

The waste encountered during the mining operation is mainly. During Plan period gritty soil removed will be dumped at northern side with suitable precaution. Some quantity of the removed gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

i. Use of Sharp Drill Bits

ii. Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

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iii. **Blasting** – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced.
- Optimum quantity of explosives would be used.
- Blasting to be done during favourable weather conditions.

iv. **Operation of Diesel Equipment's** – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

v. **Loading of Product on Truck** – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

vi. **Movement of Trucks on Road** – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken:

- Regular water sprinkling on Haul road by using water Tankers.
- Regular repair of Haul road.
- All Trucks carrying stone outside lease area will have PUC certificate

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard Identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.

- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

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- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people

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become aware of the blasting activities being undertaken in the area and take appropriate precautions.

- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonators shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the work place (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks /tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any in coming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the mainroad (wherever required).

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- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Arjundaha Stone Mine of Shri Gobinda Mondal, Village : Arjundaha, Thana no. : 324, Thana : Maheshpur, Distt.: Pakur, Jharkhand (2.03 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests. Summary findings of same to submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Falling of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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8. Chilgaon Stone Mine of Shri Isob Shekh, Village : Chilgaon, Thana no. : 11, Anchal : Maheshpur, Distt.: Pakur, Jharkhand (2.458 Ha).

(Proposal no.: SIA/JH/MIN/500961/2024)

Name of the consultant :Oceao-Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.

This is a new project which has been taken for appraisal on 23.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 41,515 cum/Annum /1,12,090Ton/Annum.

Project and Location Details:

S. No	Parameter	Details						
1	Project Name	: Chilgaon Stone Mine						
2	Lessee/ Director	: M/s Isob Shekh						
3	Lessee Address	: MouzaChilgaon, Thana No.- 11, Anchal - Maheshpur, District- Pakur, Jharkhand						
4	Lease Area	: Ha: 2.458 Ha Acres: 6.07 Acres						
5	Type of Land	: Raiyati Land						
6	Project Cost	: 33 Lakhs						
7	EMP Budget	: Capital: 40.26 Lakhs Recurring: 6.80 Lakhs / year						
8	New or Expansion	: New						
9	Mineable Reserves	: 4,14,485 Cum 11,19,109.5 Tonnes						
10	Mine Life	: 10 Years						
11	Man power	: 22 persons						
12	Water Requirement	: Total water requirement is about 10.66 KLD = 0.66 KLD (Drinking & Domestic Uses) + 5.0 (Plantation) KLD + 5.0 KLD (Dust Suppression).						
13	Water Source	: The drinking water will be available from nearby village by tractor tank manually by labors at the site.						
14	DG Set / power	: 125 KVA (Temporary setup for Backup)						
15	Crusher	: Not Proposed						
16	Nearest Water Body	: Ranipur River(Pargana Nadi) is about 11.3 km in N direction.						
17	Nearest Habitation	: Chilgaon is about 0.43 km in SSW direction						
18	Nearest Rail Station	: Pakur Railway station, Pakur is about 15.94 km in ENE direction.						
19	Nearest Airport	: Deoghar Airport is about 103.17 km in WSW direction.						
20	Nearest Forest	: <table border="1"> <tr> <td>Dharnipahar PF</td><td>3.76</td><td>E</td></tr> <tr> <td>Ganropahari Forest</td><td>4.73</td><td>WNW</td></tr> </table>	Dharnipahar PF	3.76	E	Ganropahari Forest	4.73	WNW
Dharnipahar PF	3.76	E						
Ganropahari Forest	4.73	WNW						

			Dhanghara Forest	6.19	NE
21	Road & Highways	:	Nearest Dumka Sahibganj Road is 12.01 KM away from the mine site in W direction. Nearest NH-133A is 12.52 KM away from the mine site in N direction.		

CO-ORDINATES

S. No.	Latitude	Longitude	S. No.	Latitude	Longitude
1	24°34'56.304"N	87°42'33.163"E	11	24°35'3.066"N	87°42'31.003"E
2	24°34'57.358"N	87°42'33.809"E	12	24°35'3.615"N	87°42'29.701"E
3	24°34'58.411"N	87°42'34.499"E	13	24°35'1.762"N	87°42'29.144"E
4	24°34'59.938"N	87°42'35.492"E	14	24°35'1.762"N	87°42'28.619"E
5	24°35'1.525"N	87°42'36.001"E	15	24°35'0.961"N	87°42'29.373"E
6	24°35'1.807"N	87°42'34.947"E	16	24°35'0.038"N	87°42'30.241"E
7	24°35'2.232"N	87°42'33.828"E	17	24°34'59.739"N	87°42'30.118"E
8	24°35'2.694"N	87°42'32.763"E	18	24°34'58.801"N	87°42'30.808"E
9	24°35'3.208"N	87°42'31.748"E	19	24°34'57.715"N	87°42'31.606"E
10	24°35'2.683"N	87°42'31.463"E	20	24°34'57.197"N	87°42'32.454"E

LAND DETAILS

Khata no.	Plot no.
27	58 (P)
11	60 & 61 (P)
30	65

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LOI) has been issued by District Mining Officer, Pakur vide memo no. 1535/M, dated 18.09.2024.
2	CO	:	The CO, Maheshpur vide letter no. 78/Ra., dated 01.02.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II and also mentioned that the habitation of 23-25 houses at a distance of 260 meters of proposed project site, accordingly PAs has submitted EMP for the same.
3	DMO	:	DMO, Pakur vide memo no. 1608/M, dated 24.09.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO -cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2098, dated 03.09.2024 certified that the proposed

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		project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	Division Forest Officer, Pakur Forest Division vide letter no. 318, dated 23.02.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	The DMO, Pakur has been certified vide memo no. 1607/M, dated 24.09.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 80, Page no. 130).
7	Gram Sabha	BDO, Maheshpur vide letter no. 2397/V. Dated 07.12.2023 informed that Gram Sabha conducted on 28.11.2023.
8	Mine Plan Approval	Approved by District Mining Officer, Pakur vide Memo No. 1786/M, dated 17.10.2024.
9	Qualified Person	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	: OCM & Semi-Mechanised
2	Lease Area	: 6.07 ACRES / 2.458 HA Life of Mine – 10 years
3	Waste Generation	: 5 years– 31730 Cum
4	Stripping Ratio(t/m ³)	: 1:0.05
5	Working Days	: 300
6	Bench: size & No	: 6m x 6m
7	Highest Elevation of lease Area	: 115 MSL
8	Lowest Elevation of lease Area	: 112 MSL
9	Ultimate Working Depth	: 81 MSL
10	Water Table	: 67 MSL
11	Topography of Mine	: almost flat land with hillocks
12	Explosive Requirement	: 93.37 kg
13	Diesel/Fuel requirement	: 512 Litres per day

Production Details

Year	Generation of Waste/O. & in cum	Production of Stone in Cum	Production of Stone in Tonnes	Grade/Uses
1st	23465.00	41420.00	111834.00	Construction & Road
2nd	0.00	41515.00	112090.50	Construction & Road
3rd	8265.00	41420.00	111834.00	Construction & Road

4th	0.00	41270.00	111429.00	Construction & Road
5th	0.00	41510.00	112077.00	Construction & Road
Total	31730.00	207135.00	559264.50	
Maximum production proposed in- 41,515Cum/1,12,090.50Ton				
Stripping Ratio in (t/m3)- 1:0.05				

Land Use

LAND USE PATTERN			
	Existing	First to Fifth Years	After Life of Mine
Category	Area in Hectares	Area in Hectares	Area in Hectares
Quarry	0	1.1/3	2.008 (0.26ha Backfilled and proposed for plantation, 1.74ha converted into water reservoir)
Haul Road	0	0.05	0.00
Proposed Crusher	0		Crusher not proposed
Green belt in Safety Zone	0	0.450	0.450
Dump with Parapet wall & Garland drain	0	0.230	Top soil will be used for plantation in first year and rest OB will be used road dressing and Backfilling
Total area in use	0	1.903	2.458
Balance unused area	2.457	0.555	0.00
Balance used area	0	00	0.00
Total Applied Lease Area	2.458	2.458	2.458

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Place of Plantation	Spacing b/w plants	Total No. of Plants	Area Cover in Square Meters	Total Area In Ha.	Species
1st	Safety Zone	2.5 x 2.5	720	4500	0.45	Gulmohar, Gular, Sagwan, Fruit Bearing Trees Mango,
	Haul Road	3 x 3	1332	1000M Approach Road 1000/3=333Plants 333x4row=1332Plants	---	
2nd	Care & Protection	---	---	---	---	

3rd	Care & Protection	---	---	---	---	Jack fruit, Guava
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			2052	4500	0.45	

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Budget

PROPOSED FOR ENVIRONMENT MANAGEMENT COST						
S. No.	Mitigative measures to protect Environment	Criteria Pollutants	Capital Cost (In Lakh)	Recurring cost (In Lakh)	Implementation Responsibility	Frequency and Method
1.	Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine) One Water Tanker	Dust (PM 10 & PM 2.5)	29.5	2.9	Mining Mate supervised by Mine Manager	Daily Basis/Requirement Basis Register/Log book
	Solid waste management	Municipal Solid by workers	0.5	0.1		Record maintain & coordination with vendors
2.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @No. of plants 1552 x 500Rs.	No2,So2 & CO reduction Noise reduction	10.26	3.0	Mining Mate supervised by Mine Manager	Care taking@twice a week, Tree Inventory,
3.	Environment Monitoring (Air, Water, Noise& Soil Monitoring)	Deviation in Baseline	Nil	0.80	Out source to NABL Accredited Lab-Monitored by Mine	Mine Manager Review of base line as per monitoring plan proposed

					Manager	
	TOTAL		40.26	6.80		

Blasting EMP

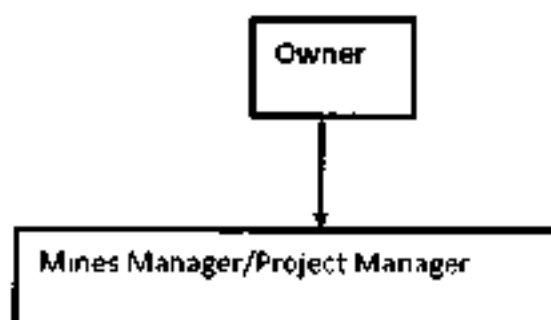
Blasting			
	Training and Awareness of personnel during Blasting operations	50,000	0
	Provision of safe distance from the Project site for the settlements		
	▪ Blasting shelters and Sirens	50,000	5,000
	▪ Portable Drop Arm Barrier	2,00,000	10,000
	Total cost	3,00,000	15,000

Environment Monitoring Plan (post operation)

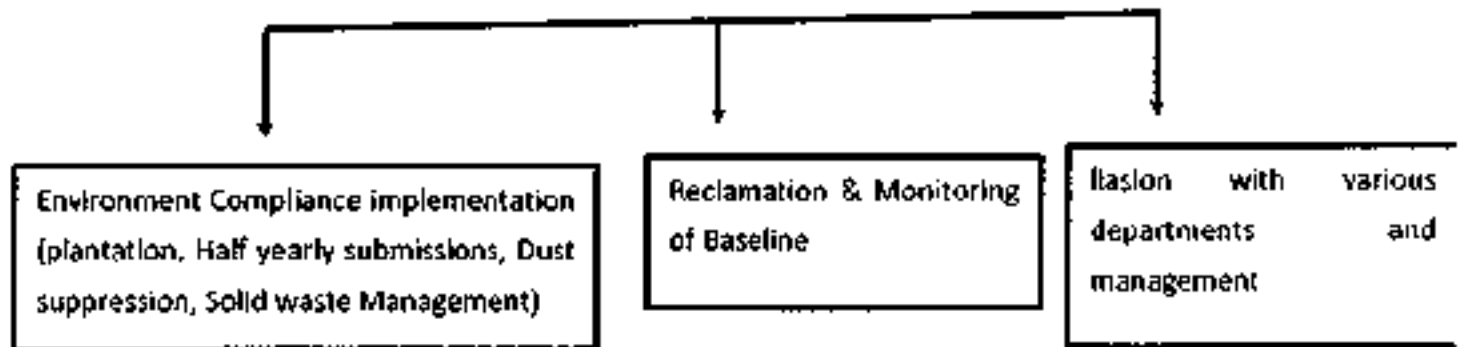
Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx In the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring. Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Organization Chart for Environment Management Cell



Mining Mate



FUNCTIONS OF ENVIRONMENT MONITORING CELL

Supervision: Managed by Mines Manager with a qualified technical team.

Personnel: Includes skilled, semi-skilled, unskilled, and other third parties.

Responsibilities:

- ❖ Implement environmental control measures.
- ❖ Oversee reclamation planning and management.
- ❖ Manage air and water pollution control.
- ❖ Liaise with state and central statutory agencies.
- ❖ Develop greenbelt areas.

Performance Review: Assess corporate environmental performance and report non-compliances.

Remedial Actions: Suggest and implement actions for exceeding pollution limits.

Coordination:

Collect health statistics for workers and local population.

Act as a bridge for project implementation and Project Authorities

Facilitate afforestation efforts.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.

- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gablon plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Solid Waste Management

The waste encountered during the mining operation is mainly. During Plan period gritty soil removed will be dumped at northern side with suitable precaution. Some quantity of the removed gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

i. Use of Sharp Drill Bits

ii. Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

iii. Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced.
- Optimum quantity of explosives would be used.
- Blasting to be done during favourable weather conditions.

iv. **Operation of Diesel Equipment's** – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

v. **Loading of Product on Truck** – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

vi. **Movement of Trucks on Road** – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken:

- Regular water sprinkling on Gaur road by using water Tankers.
- Regular repair of Haul road.
- All Trucks carrying stone outside lease area will have PUC certificate

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to over charging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people

become aware of the blasting activities being undertaken in the area and take appropriate precautions.

- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations

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Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the work place (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

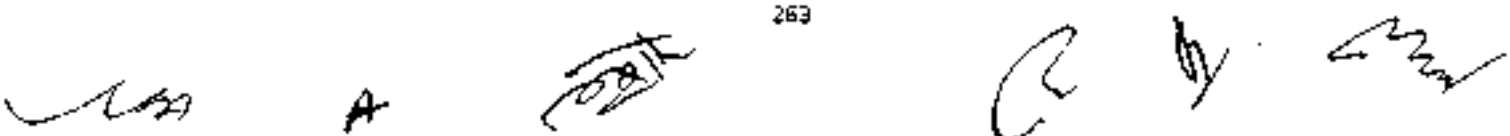
The usual method of transporting minerals from the working face is by trucks /tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any in coming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the mainroad (wherever required).

- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Chilgaon Stone Mine of Shri Isob Shekh, Village : Chilgaon, Thana no. : 11, Anchal : Maheshpur, Distt.: Pakur, Jharkhand (2.458 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLife Portal (<https://merilife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.



9. Maheshgaria Stone Mine of Shri Kailash Kumar Chitlangi, Village : Maheshgaria, Thana no. : 333, Anchal : Maheshpur, Distt.: Pakur, Jharkhand (2.567 Ha).

(Proposal no.: SIA/JH/MIN/ 502135/2024)

Name of the consultant :Oceao-Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.

This is a new project which has been taken for appraisal on 23.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 41,118 Cum per Year/1,11,018.60 tonnes per Year or 137.0 Cum per day/370.0 Tonnes Per day.

Project and Location Details:

S. No	Parameter	Details
1	Project Name	: Maheshgaria Stone Mine
2	Lessee/ Director	: Shri Kailash Kumar Chitlangi
3	Lessee Address	: R/o- Vill-Nalhati, Patharkalpara Thana-Nalhati, District- Birbhum, West Bengal-731243
4	Lease Area	: Ha: 2.567Ha Acres: 6.34 Acres
5	Type of Land	: Relyati Land
6	Project Cost	: 40 Lakhs
7	EMP Budget	: Capital: 31.34 Lakhs Recurring: 5.7 Lakhs / year
8	New or Expansion	: New
9	Mineable Reserves	: 4,11,203.00 Cum 11,10,248.10 Tonnes
10	Mine Life	: 10 Years
11	Man power	: 22 persons
12	Water Requirement	: Total water requirement is about 7.66 KLD= 0.66 (Drinking Water & Domestic Uses) + 3 KLD (Water sprinkling) + 4 KLD (plantation).
13	Water Source	: by Authorised hired water tankers
14	DG Set / power	: 125 KVA (Temporary setup for Backup)
15	Crusher	: Not Proposed
16	Nearest Water Body	: Chilimpur aganwari Pond is about 0.51 km in NNW direction.
17	Nearest Habitation	: Maheshgaria is about 1.09 km in SE direction
18	Nearest Rail Station	: Railway Station Nalhati is about 9.28 km in NW direction.

19	Nearest Airport	:	Deoghar Airport is about 107.41 Km in WNW direction.
20	Nearest Forest	:	Beldange & Saldanga P.F. is about 2.5 Km in ESE direction. Sultanpur P.F. is about 5.33 Km in NE direction. Salpani P.F. is about 5.29 Km in NE direction.
21	Road & Highways	:	Nalhati-Pakuria Rd is 2.86 Km in SSW direction.

CO-ORDINATES

S. No.	Latitude	Longitude
1	24° 20' 18.191" N	87° 45' 35.217" E
2	24° 20' 16.023" N	87° 45' 36.877" E
3	24° 20' 14.833" N	87° 45' 38.461" E
4	24° 20' 16.044" N	87° 45' 40.179" E
5	24° 20' 15.785" N	87° 45' 41.237" E
6	24° 20' 15.103" N	87° 45' 42.577" E
7	24° 20' 15.949" N	87° 45' 43.323" E
8	24° 20' 16.802" N	87° 45' 44.059" E
9	24° 20' 17.074" N	87° 45' 43.730" E
10	24° 20' 16.911" N	87° 45' 43.195" E
11	24° 20' 17.783" N	87° 45' 43.058" E
12	24° 20' 17.444" N	87° 45' 42.358" E
13	24° 20' 16.787" N	87° 45' 41.498" E
14	24° 20' 18.039" N	87° 45' 41.099" E
15	24° 20' 19.240" N	87° 45' 40.749" E
16	24° 20' 19.425" N	87° 45' 41.025" E
17	24° 20' 19.164" N	87° 45' 42.282" E
18	24° 20' 19.980" N	87° 45' 42.884" E
19	24° 20' 19.875" N	87° 45' 43.281" E
20	24° 20' 20.600" N	87° 45' 43.286" E
21	24° 20' 21.181" N	87° 45' 43.779" E
22	24° 20' 21.430" N	87° 45' 43.381" E
23	24° 20' 21.209" N	87° 45' 43.136" E
24	24° 20' 22.186" N	87° 45' 41.865" E
25	24° 20' 20.857" N	87° 45' 40.996" E
26	24° 20' 20.510" N	87° 45' 40.233" E
27	24° 20' 20.069" N	87° 45' 40.316" E
28	24° 20' 19.634" N	87° 45' 37.932" E
29	24° 20' 18.916" N	87° 45' 35.607" E

LAND DETAILS

Khata no.	Plot no.
03	04, 05 & 17
05	02, 03 & 06
08	19, 20, 29 & 31
09	16
10	01

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 1658/M, dated 28.09.2024.
2	CO	:	The CO, Maheshpur vide letter no. 480/Ra., dated 02.07.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II and also mentioned that the habitation of 22-24 houses at a distance of 296 meters of proposed project site, accordingly PAs has submitted EMP for the same.
3	DMO	:	DMO, Pakur vide memo no. 1716/M, dated 09.10.2024 certified that 02 other mining lease area (2.16 Acre & 2.07 Acre) exists within 500 meters radius from proposed project site and total area is 10.57 Acre or 4.28 Ha.
4	DFO Wild Life	:	DFO -cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2235, dated 09.09.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide letter no. 1430, dated 29.08.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 1717/M, dated 09.10.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 197, Page no. 131).
7	Gram Sabha	:	BDO, Maheshpur vide letter no. 1160/Vi. Dated 05.09.2024 informed that Gram Sabha conducted on 20.01.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 1754/M, dated 15.10.2024.
9	Qualified Person	:	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	OCM & Semi-Mechanised	
2	Lease Area	:	3.84 ACRES / 1.555 HA	Life of Mine – 10 years
3	Waste Generation	:	5 years– 42414.00	
4	Stripping Ratio(t/m ³)	:	1:0.07	

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5	Working Days	:	300
6	Bench: size & No	:	6m x 6m
7	Highest Elevation of lease Area	:	78 AMSL
8	Lowest Elevation of lease Area	:	76 AMSL
9	Ultimate Working Depth	:	42 AMSL
10	Water Table	:	31 AMSL
11	Topography of Mine	:	almost flat land with hillocks
12	Explosive Requirement	:	92.69Kg
13	Diesel/Fuel requirement	:	440 Litres per day

Production Details

Year	Generation of Waste/O. & in cum	Production of Stone in Cum	Production of Stone in Tonnes	Grade/Uses
1st	14124.00	40920.00	110484.00	Construction & Road
2nd	11475.00	40758.00	110046.60	Construction & Road
3rd	10875.00	40800.00	110160.00	Construction & Road
4th	0.00	41025.00	110767.50	Construction & Road
5th	5940.00	41118.00	111018.60	Construction & Road
Total	42414.00	204621.00	552476.70	
Maximum production proposed in- 41118Cum/111018.60 Ton				
Stripping Ratio in (t/m3)- 1:0.07				

Land Use

LAND USE PATTERN			
	Existing	First to Fifth Years	After Life of Mine
Category	Area in Hectares	Area in Hectares	Area in Hectares
Quarry	0.00	1.292	1.817(0.30ha Backfilled,1.517converted in to water reservoir)
Haul Road	0.00	0.03	0.00
Proposed Crusher	0.00	0.00	0.00
Green belt in Safety Barrier	0.00	0.750	0.750
Dump with Parapet wall & Garland drain	0.00	0.35	Top soil will be used for plantation in first year and

		rest DB will be used road dressing and Backfilling	
Total area in use		2.422	2.567
Balance unused area	0.00	0.145	0.00
Balance used area	0.00	0.00	0.00
Total Applied Lease Area	2.567	2.567	2.567

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Place of Plantation	Spacing b/w plants	Total No. of Plants	Area Cover in Square Meters	Total Area in Ha.	Species
1st	Safety Zone	2.5 x 2.5	1200	7500	0.75	Peepal, Bargad, Neem Mahua <u>Fruit Bearing Trees</u> Mango, Jackfruit, Guava
	Haul Road	3 x 3	1068	500M Approach Road 500/3=167Plants 100x4row=6680Plant		
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			2268	7500	0.75	

- Gablon Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Budget

PROPOSED FOR ENVIRONMENT MANAGEMENT COST						
S. No.	Mitigative measures to protect Environment	Criteria Pollutants	Capital Cost (In Lakh)	Recurring cost (In Lakh)	Implementation Responsibility	Frequency and Method

1.	Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine) One Water Tanker	Dust (PM 10 & PM 2.5)	19.5	1.9	Mining Mate supervised by Mine Manager	Daily Basis/Requirement Basis Register/Log book
	Solid waste management	Municipal Solid by workers	0.5	0.1		Record maintain & coordination with vendors
2.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @No. of plants 2268 x 500Rs.	No2,So2 & CO reduction Noise reduction	11.34	2.0	Mining Mate supervised by Mine Manager	Care taking@twice a week, Tree Inventory,
3.	Environment Monitoring (Air, Water, Noise& Soil Monitoring)	Deviation in Baseline	Nil	1.7	Out source to NABL Accredited Lab-Monitored by Mine Manager	Mine Manager Review of base line as per monitoring plan proposed
	TOTAL		31.34	5.7		

Environment Monitoring Plan (post operation)

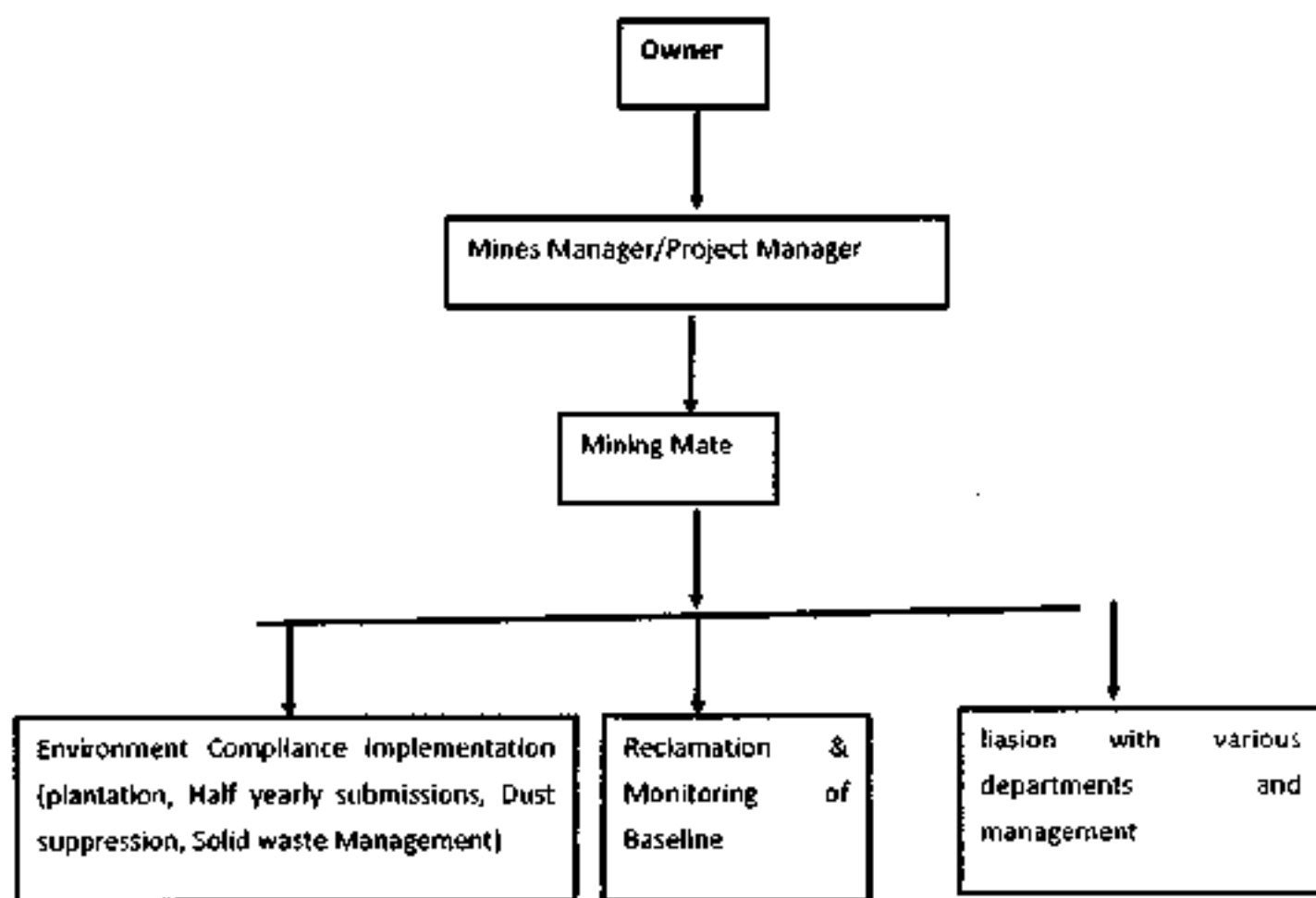
Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx In the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring. Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Blasting EMP

Blasting			
	Training and Awareness of personnel during Blasting operations	50,000	0
	Provision of safe distance from the Project site for the settlements		
	▪ Blasting shelters and Sirens	50,000	5,000
	▪ Portable Drop Arm Barrier	2,00,000	10,000
Total cost		3,00,000	15,000

ORGANIZATION CHART FOR ENVIRONMENT MANAGEMENT CELL



FUNCTIONS OF ENVIRONMENT MONITORING CELL

Supervision: Managed by Mines Manager with a qualified technical team.

Personnel: Includes skilled, semi-skilled, unskilled, and other third parties.

Responsibilities:

- ❖ Implement environmental control measures.
- ❖ Oversee reclamation planning and management.
- ❖ Manage air and water pollution control.
- ❖ Liaise with state and central statutory agencies.

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❖ Develop greenbelt areas.

Performance Review: Assess corporate environmental performance and report non-compliances.

Remedial Actions: Suggest and implement actions for exceeding pollution limits.

Coordination:

Collect health statistics for workers and local population.

Act as a bridge for project implementation and Project Authorities

Facilitate afforestation efforts.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Solid Waste Management

The waste encountered during the mining operation is mainly. During Plan period gritty soil removed will be dumped at northern side with suitable precaution. Some quantity of the removed gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desihing.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

i. Use of Sharp Drill Bits

ii. Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

iii. Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced.
- Optimum quantity of explosives would be used.
- Blasting to be done during favourable weather conditions.

iv. Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

v. Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

vi. Movement of Trucks on Road – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken:

- Regular water sprinkling on Gaur road by using water Tankers.
- Regular repair of Haul road.
- All Trucks carrying stone outside lease area will have PUC certificate

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard Identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5

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3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others

may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to over charging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidl etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonators shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the work place (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overtaking vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks /tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any in coming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.

- Navigation signs will be provided at each and every turning point up to the mainroad (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Maheshgarla Stone Mine of Shri Kailash Kumar Chitlangi, Village : Maheshgaria, Thana no. : 338, Anchal : Maheshpur, Distt.: Pakur, Jharkhand (2.567 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Mo Ke Naam" and the details of the same shall be uploaded in the MeriLife Portal (<https://merilife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

10. Srirangaria Stone Mine of Shri Amirul Islam, Village : Srirangaria, Anchal : Maheshpur, Distt.: Pakur, Jharkhand (2.94 Ha).

(Proposal no.: SIA/JH/MIN/ 502068/2024)

Name of the consultant :Oceao-Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.

This is a new project which has been taken for appraisal on 23.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 45,500 Cum per Year/1,22,850 tonnes per Year or 151.67 Cum per day/409.50 Tonnes Per day.

Project and Location Details:

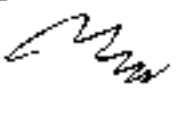
S. No	Parameter	Details
1	Project Name	: Srirangaria Stone Mine (Applicant-Shri Amirul Islam)
2	Lessee/ Director	: Shri Amirul Islam
3	Lessee Address	: Gram - Tejhati, Harisora more, District- Birbhum, W.B.
4	Lease Area	: Ha: 2.94 Ha Acres: 7.26 Acres
5	Type of Land	: Raiyati Land
6	Project Cost	: 37 Lakhs
7	EMP Budget	: Capital: 30.06 Lakhs Recurring: 6.6 Lakhs / year
8	New or Expansion	: New
9	Mineable Reserves	: 4,63,220 Cum 12,50,694 Tonnes
10	Mine Life	: 10.0 Years
11	Man power	: 22 persons
12	Water Requirement	: Total water requirement is about 7.66 KLD=0.66 KLD (Drinking & Domestic Uses) + 4.0 (Plantation) KLD + 3.0 KLD (Dust Suppression).
13	Water Source	: by Authorised hired water tankers
14	DG Set / power	: 125 KVA (Temporary setup for Backup)
15	Crusher	: No
16	Nearest Water Body	: Nearest Pond is about 1.56 km in E direction.
17	Nearest Habitation	: Srirangaria is about 260m as per the CO Letter.
18	Nearest Rail Station	: Chatra Railway Station is about 9.67 Km in ENE direction.
19	Nearest Airport	: Deoghar Airport is about 107.67 Km in W direction.
20	Nearest Forest	: NA
21	Road & Highways	: NH - 14 is about 20.24 km in SW direction. SH- 7 is about 9.73 km in ESE direction.

CO-ORDINATES

PILLARS	LATITUDE(N)	LONGITUDE(E)
01	24° 20' 43.250" N	87° 45' 21.223" E
02	24° 20' 44.948" N	87° 45' 21.758" E
03	24° 20' 44.642" N	87° 45' 22.520" E
04	24° 20' 45.512" N	24° 20' 45.512" N
05	24° 20' 45.512" N	87° 45' 23.963" E
06	24° 20' 46.547" N	87° 45' 23.932" E
07	24° 20' 46.731" N	87° 45' 24.789" E
08	24° 20' 47.245" N	87° 45' 24.240" E
09	24° 20' 47.704" N	87° 45' 24.617" E
10	24° 20' 48.107" N	87° 45' 25.181" E
11	24° 20' 47.488" N	87° 45' 25.695" E
12	24° 20' 47.179" N	87° 45' 26.673" E
13	24° 20' 46.574" N	87° 45' 27.167" E
14	24° 20' 46.376" N	87° 45' 28.361" E
15	24° 20' 46.675" N	87° 45' 28.513" E
16	24° 20' 46.413" N	87° 45' 29.696" E
17	24° 20' 45.511" N	87° 45' 29.606" E
18	24° 20' 45.112" N	87° 45' 29.804" E
19	24° 20' 44.378" N	87° 45' 28.867" E
20	24° 20' 44.881" N	87° 45' 28.535" E
21	24° 20' 44.778" N	87° 45' 27.564" E
22	24° 20' 44.230" N	87° 45' 27.564" E
23	24° 20' 43.553" N	87° 45' 27.803" E
24	24° 20' 43.739" N	87° 45' 30.088" E
25	24° 20' 43.252" N	87° 45' 30.409" E
26	24° 20' 42.001" N	87° 45' 30.063" E
27	24° 20' 41.488" N	87° 45' 30.033" E
28	24° 20' 41.062" N	24° 20' 41.062" N
29	24° 20' 40.266" N	87° 45' 28.689" E
30	24° 20' 40.395" N	87° 45' 27.697" E
31	24° 20' 41.327" N	87° 45' 27.930" E
32	24° 20' 41.875" N	87° 45' 27.039" E
33	24° 20' 42.333" N	24° 20' 42.333" N





34	24° 20' 42.833" N	87° 45' 25.026" E
35	24° 20' 43.002" N	87° 45' 24.509" E
36	24° 20' 42.226" N	87° 45' 23.991" E
37	24° 20' 42.112" N	87° 45' 22.530" E
38	24° 20' 42.954" N	87° 45' 21.601" E

LAND DETAILS

KHATA NO.	PLOT NO.
02	137, 139, 140, 144, 146P,
16	138
25	147
20	136
22	49, 131

STATUTORY CLEARANCES

1	LOI / Lease docs	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 1657/M, dated 28.09.2024.
2	CO	The CO, Maheshpur vide letter no. 629/Ra., dated 04.09.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khaliyan & Register II and also mentioned that the habitation of 20-22 houses at a distance of 260 meters of proposed project site, accordingly PAs has submitted EMP for the same.
3	DMD	DMO, Pakur vide memo no. 1718/M, dated 09.10.2024 certified that 01 other mining lease area (3.39 Acre) exists within 500 meters radius from proposed project site and total area is 10.65 Acre or 4.31 Ha.
4	DFO Wild Life	DFO -cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2369, dated 25.09.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	Division Forest Officer, Pakur Forest Division vide letter no. 1618, dated 19.09.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	The DMO, Pakur has been certified vide memo no. 1719/M, dated 09.10.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 286, Page no. 132).

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7	Gram Sabha	:	BDO, Maheshpur vide letter no. 1161/Vl. Dated 05.09.2024 informed that Gram Sabha conducted on 03.09 2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 1753/M, dated 15.10.2024.
9	Qualified Person	:	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	OCM & Semi-Mechanised	
2	Lease Area	:	7.26 ACRES / 2.94 HA	Life of Mine – 10.0 years
3	Waste Generation	:	5 years– 48545	
4	Stripping Ratio(t/m ³)	:	1:0.08	
5	Working Days	:	300	
6	Benchs: size & No	:	6m x 6m	
7	Highest Elevation of lease Area	:	78 above MSL	
8	Lowest Elevation of lease Area	:	72 above MSL	
9	Ultimate Working Depth	:	42 above MSL	
10	Water Table	:	33 above MSL	
11	Topography of Mine	:	almost flat land with hillocks	
12	Explosive Requirement	:	102.47 kg/day	
13	Diesel/Fuel requirement	:	360 litres per day	

Production Details

Year	Generation of Waste/O. B in cum	Production of Stone in Cum	Production of Stone in Tonnes	Grade/Uses
1 st	24035.00	39995.00	107986.50	Construction & Road
2 nd	24510.00	40090.00	108243.00	Construction & Road
3 rd	0.00	39995.00	107986.50	Construction & Road
4 th	0.00	45500.00	122850.00	Construction & Road
5 th	0.00	39995.00	107986.50	Construction & Road






Total	48545.00	2,05,575.00	555052.50	
Maximum production proposed in- 48545Cum/555052.50Ton				
Stripping Ratio in (t/m ³)- 1:0.08				

Land Use

LAND USE PATTERN			
	Existing	First to Fifth Years	After Life of Mine
Category	Area in Hectares	Area in Hectares	Area in Hectares
Quarry	0.00	1.321	2.14 (0.33ha Backfilled and proposed for plantation, 1.81ha converted water reservoir)
Haul Road	0.00	0.070	0.00
Proposed Crusher	0.00	0.000	0.00
Green belt in Safety Zone	0.00	0.80	0.80
Dump with Parapet wall & Garland drain	0.00	0.35	Top soil will be used for plantation in first year and rest OB will be used road dressing and Backfilling
Total area in use	0.00	2.541	2.94
Balance unused area	2.94	0.399	0.00
Balance used area	0.00	0.00	0.00
Total Applied Lease Area	2.94	2.94	2.94

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Place of Plantation	Spacing b/w plants	Total No. of Plants	Area Cover in Square Meters	Total Area In Ha.	Species
1st	Safety Zone	2.5 x 2.5	1280	8000	0.80	Neem, Peepal, Bargad, Mahua.
	Haul Road	3 x 3	732	550M Approach Road 550/3=183Plants 183x4row=732Plant		Plas <u>Fruit Bearing Trees</u>
2nd	Care &	---	---	---	---	Mango,

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	Protection					Jackfruit, Guava
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			2012	8000	0.80	

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Budget

PROPOSED FOR ENVIRONMENT MANAGEMENT COST						
S. No.	Mitigative measures to protect Environment	Criteria Pollutants	Capital Cost (In Lakh)	Recurring cost (In Lakh)	Implementation Responsibility	Frequency and Method
1.	Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine) One Water Tanker	Dust (PM 10 & PM 2.5)	19.5	2.9	Mining Mate supervised by Mine Manager	Daily Basis/Requirement Basis Register/Log book
	Solid waste management	Municipal Solid by workers	0.5	0.1		Record maintain & coordination with vendors
2.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @No. of plants 2012 x 500Rs	No2, So2 & CO reduction Noise reduction	10.06	2.0	Mining Mate supervised by Mine Manager	Care taking@twice a week, Tree Inventory,
3.	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	Deviation in Baseline	Nil	1.6	Out source to NABL Accredited Lab-Monitored by Mine Manager	Mine Manager Review of base line as per monitoring plan proposed






	TOTAL		30.06	6.6		

Blasting EMP

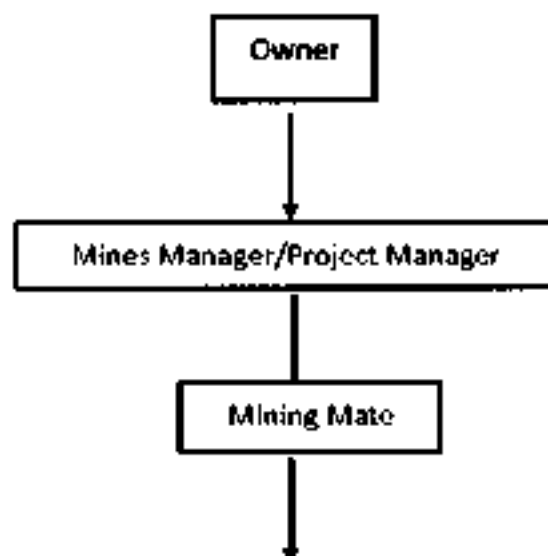
Blasting			
	Training and Awareness of personnel during Blasting operations	50,000	0
	Provision of safe distance from the Project site for the settlements		
	• Blasting shelters and Sirens	50,000	5,000
	• Portable Drop Arm Barrier	2,00,000	10,000
	Total cost	3,00,000	15,000

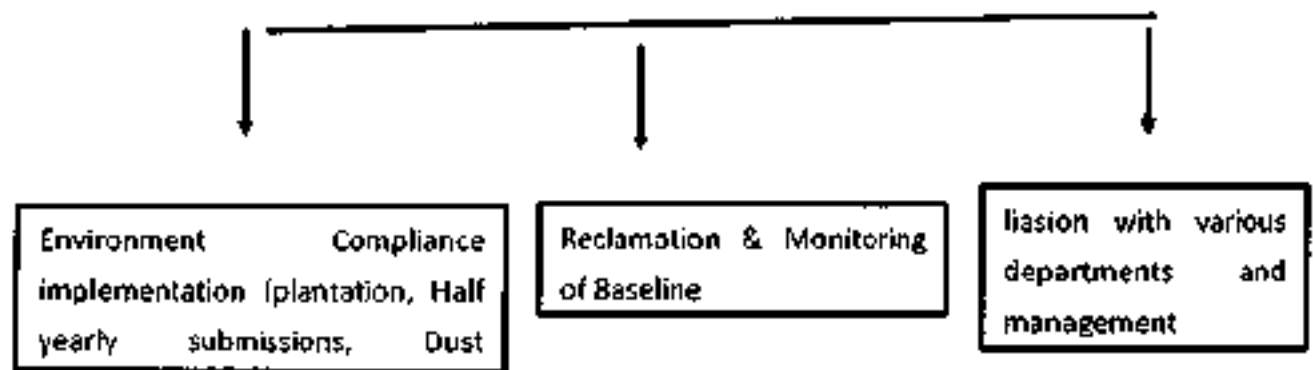
Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx In the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

ORGANIZATION CHART FOR ENVIRONMENT MANAGEMENT CELL





FUNCTIONS OF ENVIRONMENT MONITORING CELL

- **Supervision:** Managed by Mines Manager with a qualified technical team
- **Personnel:** Includes skilled, semi-skilled, unskilled, and other third parties.
- **Responsibilities:**
 - ✓ Implement environmental control measures.
 - ✓ Oversee reclamation planning and management.
 - ✓ Manage air and water pollution control.
 - ✓ Liaise with state and central statutory agencies.
 - ✓ Develop greenbelt areas.
- **Performance Review:** Assess corporate environmental performance and report non-compliances.
- **Remedial Actions:** Suggest and implement actions for exceeding pollution limits.
- **Coordination:**

Collect health statistics for workers and local population.

Act as a bridge for project Implementation and Project Authorities

Facilitate afforestation efforts.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.

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- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Solid Waste Management

The waste encountered during the mining operation is mainly. During Plan period gritty soil removed will be dumped at northern side with suitable precaution. Some quantity of the removed gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

i. **Use of Sharp Drill Bits**

ii. **Wet Drilling** – Water will be sprinkled on the site where drilling has to be done.

iii. **Blasting** – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced.
- Optimum quantity of explosives would be used.
- Blasting to be done during favourable weather conditions.

iv. Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

v. Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

vi. Movement of Trucks on Road – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken:

- Regular water sprinkling on Haul road by using water Tankers.
- Regular repair of Haul road.
- All Trucks carrying stone outside lease area will have PUC certificate

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the Following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.

✓ LA A DATE 2012

- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to over charging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how

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risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonators shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the work place (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

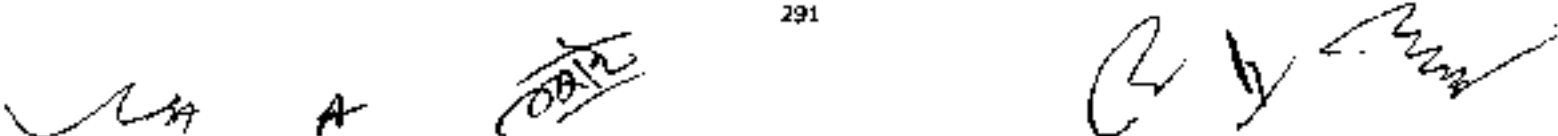
Transportation

The usual method of transporting minerals from the working face is by trucks /tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any in coming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the mainroad (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Sriramgaria Stone Mine of Shri Amirul Islam, Village : Sriramgaria, Anchal : Maheshpur, Distt.: Pakur, Jharkhand (2.94 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety



zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests. Summary findings of same to be submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

11. Bhuska Stone Mine of M/s Otan Das and Company (Mining) Pvt. Ltd., Village : Bhuska, Thana & Anchal : Pakur, Distt.: Pakur, Jharkhand (2.295 Ha).

(Proposal no.: SIA/JH/MIN/500901/2024)

Name of the consultant : Oceao-Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.

This is a new project which has been taken for appraisal on 23.10.2024.

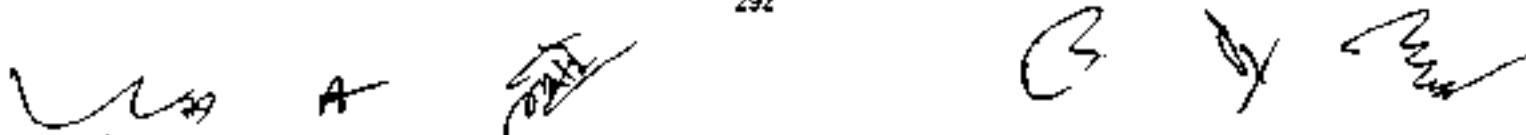
Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Terms of Reference (ToR) as per EIA notification, 2006.

ToR Application for: 72,270 Cum Per Annum / 1,95,129 Ton Per Annum

Project and Location Details:

S. No	Parameter	Details
1	Project Name	: Bhuska stone mine
2	Lessee	: M/s Otan Das and Company (Mining) Private Limited. - Shri Pratik Agarwala
3	Lessee Address	: Khata No. 23, 32, 29, 13, Plot No.- 953, 964, 965, 966, 967, 968P, 969P, 970 located at Mouza- Bhuska, Thana- Pakur,



		Anchal-Pakur, District: Pakur, Jharkhand			
4	Lease Area	:	2.295 ha	5.67 Acre	
5	Type of Land	:	Raiyati Land		
6	Project Cost	:	35.00 (in Lakhs)		
7	EMP Budget	:	Capital: 28.85Lakhs	Recurring: 8.40 Lakh / year	
8	New or Expansion	:	New		
9	Mineable Reserves	:	3,93,665 Cum	10,62,895.5 Ton	
10	Mine Life	:	06 Years		
11	Man power	:	30 (10 unskilled+ 20 semi-skilled)		
12	Water Requirement	:	Total water requirement is about 10.90 KLD× 0.90 (Drinking Water & Domestic Uses) + 5 KLD (Water sprinkling) + 5 KLD (plantation).		
13	Water Source	:	by Authorised hired water tankers		
14	DG Set / power	:	125 KVA (Temporary setup for Backup)		
15	Crusher	:	Not Proposed		
16	Nearest Water Body	:	Ram Sagar Pokhar is about 3.79 km in NNE direction		
17	Nearest Habitation	:	Village Bhuska is about 0.35 km in W direction		
18	Nearest Rail Station	:	Nagarnabi Railway Station is about 4.36 Km in ESE direction		
19	Nearest Airport	:	Deoghar Airport, Ranchi is about 115.3Km in WSW direction.		
20	Nearest Forest	:	BAHADURPUR SHAL FOREST	6.54	E
		:	BAGDABRA SHAL FOREST	4.83	E
		:	GUMAPAHAR PF	11.05	WNW
21	Road & Highways	:	NH – 133A is 8.13 km away from the mine site in ENE direction. SH-1 Nasipur is 3.04 km away from the mine site in E direction.		

CO-ORDINATES

S. No.	Latitude	Longitude	S. No.	Latitude	Longitude
1	24°36'4.761" N	87°49'37.459" E	13	24°36'2.837" N	87°49'30.688" E
2	24°36'4.539" N	87°49'35.667" E	14	24°36'2.156" N	87°49'30.891" E
3	24°36'4.686" N	87°49'33.975" E	15	24°36'1.087" N	87°49'31.420" E
4	24°36'4.728" N	87°49'33.590" E	16	24°36'0.958" N	87°49'29.858" E
5	24°36'3.872" N	87°49'33.064" E	17	24°36'0.052" N	87°49'30.334" E
6	24°36'4.206" N	87°49'33.036" E	18	24°36'0.346" N	87°49'31.985" E
7	24°36'4.831" N	87°49'32.142" E	19	24°36'0.640" N	87°49'33.569" E
8	24°36'4.392" N	87°49'31.056" E	20	24°36'1.221" N	87°49'36.711" E
9	24°36'4.609" N	87°49'30.738" E	21	24°36'2.157" N	87°49'36.962" E
10	24°36'4.198" N	87°49'30.406" E	22	24°36'2.338" N	87°49'38.412" E
11	24°36'3.387" N	87°49'30.852" E	23	24°36'2.904" N	87°49'38.558" E
12	24°36'2.980" N	87°49'31.226" E	24	24°36'4.053" N	87°49'38.057" E

LAND DETAILS

Khata no.	Plot no.
23	953
32	964, 965, 966 & 967

29	968 (P)
13	969 (P) & 970

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 879/M, dated 08.06.2024.
2	CO	:	The CO, Pakur vide letter no. 395/Ra., dated 18.03.2021 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyani & Register II.
3	DMO	:	DMO, Pakur vide memo no. 1574/M, dated 23.09.2024 certified that 01 LoI (5.879 Acre) and 01 other mining lease area (7.00 Acre) exists within 500 meters radius from proposed project site and total area is 18.549 Acre or 7.51 Ha.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 1993, dated 05.11.2021 certified that the proposed project site is outside Eco Sensitive Zone of Udhwala Lake Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide letter no. 1022, dated 04.07.2022 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 1573/M, dated 23.09.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 01, Page no. 45).
7	Gram Sabha	:	BDO, Pakur vide letter no. 1265/Vi, Dated 17.08.2022 informed that Gram Sabha conducted on 10.08.2022.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 1800/M, dated 18.10.2024.
9	Qualified Person	:	Md Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	OCM & Mechanized	
2	Lease Area	:	2.295 Ha/5.67 Acres	Life of Mine-06 years
3	Waste Generation	:	5 years- 59150 CUM	
4	Stripping Ratio(t/m ³)	:	1:0.06	
5	Working Days	:	300	
6	Bench: size & No	:	6m x 6m	

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7	Highest Elevation of lease Area	:	41 Amsl
8	Lowest Elevation of lease Area	:	40 Amsl
9	Ultimate Working Depth	:	11 Amsl
10	Water Table	:	03 Amsl (38BGL)
11	Topography of Mine	:	Uneven Land
12	Explosive Requirement	:	Tentative 162.55Kg/Day
13	Diesel/Fuel requirement	:	420 Litres per day

Production Details

Year	Generation of Waste/O. B in cum	Production of Stone in Cum	Production of Stone in Tonnes	Grade/Uses
1st	30770.00	66300.00	179010.00	Construction & Road
2nd	0.00	66810.00	180387.00	Construction & Road
3rd	16500.00	66735.00	180184.00	Construction & Road
4th	6380.00	66990.00	180873.00	Construction & Road
5th	5500.00	72270.00	195129.00	Construction & Road
Total	59150.00	339105.00	915583.00	
Stripping Ratio in (t/m ³)- 1:0.06				

Land Use

LAND USE PATTERN			
	Existing	First to Fifth Years	After Life of Mine
Category	Area in Hectares	Area in Hectares	Area in Hectares
Quarry	0.00	1.690 (0.31 Backfilled)	1.75(0.37ha Backfilled and used for planation and rest 1.38 converted into water reservoir)
Haul Road	0.00	0.020	0.00
Proposed Crusher	0.00	0.000	0.00
Green belt in Safety Barrier	0.00	0.545	0.545
Dump with Parapet wall & Garfand drain	0.00	0.00	Top soil will be used for plantation in first year and rest OB will be used road dressing and Backfilling
Total area in use	0.000	2.255	2.295
Balance unused area	2.295	0.04	0.00
Balance used area	0.00	0.00	0.00
Total Applied Lease Area	2.295	2.295	2.295

ENVIRONMENT MANAGEMENT

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Green Belt Development

Year	Place of Plantation	Spacing b/w plants	Total No. of Plants	Area Cover in Square Meters	Total Area in Ha.	Species
1st	Safety Zone	2.5 x 2.5	872	5450	0.545	Safety Zone Peepal, Bargad, Neem, Mahua
	Haul Road	3.0 x 3.0	932	700Meter Approach Rd. Two row both side $700/3=233 \times 4=932$ Plants		
2nd	Care & Protection	---	---	---	---	Along the Rd. fruit bearing trees Mango, Jack fruit, Guava,
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			1804	5450	0.545	

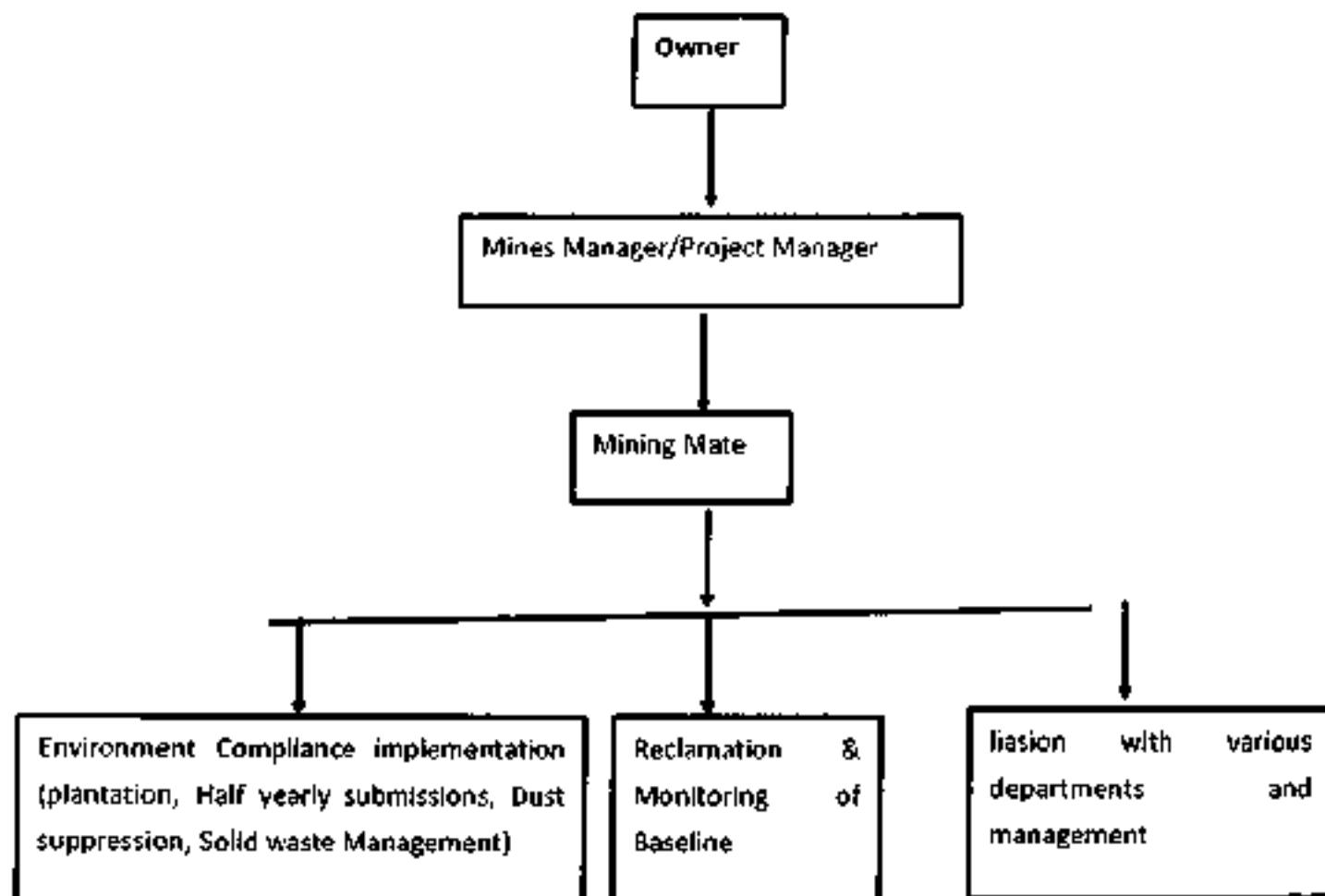
- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

EMP Budget

S. NO.	Particulars	Budget Provisions (Rs)	
		Capital	Recurring
Water Demand			
1(a)	Fixed Overhead water sprinkling system with solar pump for outgoing and incoming transportation vehicles for haul road and green beltCost for 300 days for 7 KLD @5 KL tanker capacity, Rupees 500/- per tanker	1,00,000	2,10,000
	& One dedicated tanker of 5 KL for Greenbelt Management	10,00,000	50,000
1(b)	Discharge of waste water 300 days for 0.72 KLD @5 KL tanker capacity, Rupees 2000/per tanker	0	86,400
2	Prepare & Maintenance of approach road (Max. Road length 700 m, Width 4.0 m) @ 500Rs. /Meter.	4,50,000	35,000
3	Monitoring (Air, Water, Soil & Noise)	Nil	1,00,000
4	Settling tank 2 in no's (LBH 12 m* 7 m* 4 m) & Garland	2,00,000	30,000

	drains		
5	Wire Fence 755 m x 300 /- meter	2,26,500	-
Plantation Scheme			
Plantation in consultation with DFO & Gram Panchayat and conversion to Grazing land as far as possible.			
6	Green belt development safety zone 7.5mtr and along the road (for each plants including hedges and fences and tree guard at approach roads) 1804 No. of plants x 500 Rs.	9,02,000	3,00,000
Solid Waste Management			
7	Blins 2 Nos.	1,500	4,000
8	Transport of Dry Waste	5,000	
9	Vehicle Maintenance +PUC Certification	Nil	25,000
Total EMP Budget		28,85,000	8,40,400

ORGANIZATION CHART FOR ENVIRONMENT MANAGEMENT CELL



FUNCTIONS OF ENVIRONMENT MONITORING CELL

Supervision: Managed by Mines Manager with a qualified technical team.

Personnel: Includes skilled, semi-skilled, unskilled, and other third parties.

Responsibilities:

- ❖ Implement environmental control measures.
- ❖ Oversee reclamation planning and management
- ❖ Manage air and water pollution control.
- ❖ Liaise with state and central statutory agencies.
- ❖ Develop greenbelt areas.

Performance Review: Assess corporate environmental performance and report non-compliances.

Remedial Actions: Suggest and Implement actions for exceeding pollution limits.

Coordination:

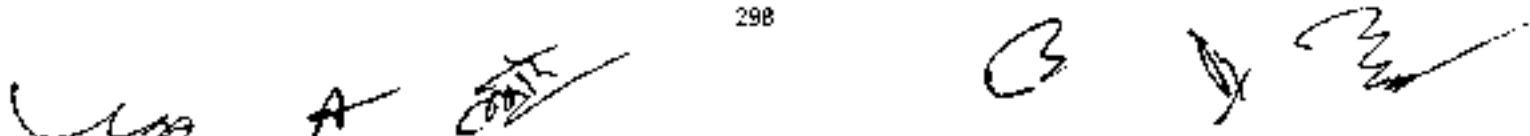
Collect health statistics for workers and local population.

Act as a bridge for project implementation and Project Authorities

Facilitate afforestation efforts.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report Issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Solid Waste ManagementThe bottom of the page features several handwritten signatures and initials in black ink. From left to right, there is a stylized signature, the letter 'A', a signature that appears to be 'GATE', a large letter 'B', a signature that looks like 'S', and a final signature on the far right.

The waste encountered during the mining operation is mainly. During Plan period gritty soil removed will be dumped at northern side with suitable precaution. Some quantity of the removed gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

i. Use of Sharp Drill Bits

ii. Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

iii. Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced.
- Optimum quantity of explosives would be used.
- Blasting to be done during favourable weather conditions.

iv. Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

v. Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

vi. Movement of Trucks on Road – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken:

- ✓ Regular water sprinkling on Gaur road by using water Tankers.
- ✓ Regular repair of Haul road.
- ✓ All Trucks carrying stone outside lease area will have PUC certificate

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*

1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the Following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

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While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other

control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to over charging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonators shall not be carried in the same container.

- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the work place (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overtaking vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks /tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any in coming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.

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- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 22, 23, 24, 25 & 26.10.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure II) alongwith following specific condition :-

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).

12. Ramnathpur Stone Mine of M/s Mandhan Minerals Corporation, Village : Ramnathpur, Thana no. : 94, Thana : Pakur, Distt.: Pakur, Jharkhand (2.46 Ha).

(Proposal no.: SIA/JH/MIN/501946 /2024)

Name of the consultant :Oceao-Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.

This is a new project which has been taken for appraisal on 23.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Terms of Reference (ToR) as per EIA notification, 2006.

ToR Application for: Proposed Capacity: 38720 Cum Per Annum/ 104544 Ton Per Annum or 129.0 Cum Per Day/ 348.48 Ton Per Day.



Project and Location Details:

S. No	Parameter	Details												
1	Project Name	: Ramnathpur Stone Mine, M/s Mandhan Minerals Corporation Partner's- Anil Tanwani,												
2	Lessee/ Director	: Shri Anil Tanwani.												
3	Lessee Address	: R/o- At- 364 Block-B, New Ali Pore, Circus Avenue, Kolkata, West Bengal-700053												
4	Lease Area	: Ha: 2.46 Ha. Acres: 6.079 Acres												
5	Type of Land	: Raiyati Land												
6	Project Cost	: 32 Lakhs												
7	EMP Budget	: Capital: 28.51 Lakhs Recurring: 7.35 lakhs/ Year												
8	New or Expansion	: New												
9	Mineable Reserves	: 3,94,335.00 Cum 10,64,704.5 Tons												
10	Mine Life	: 10 Years												
11	Man power	: 20 persons												
12	Water Requirement	: Total water requirement is about 7.60 KLD= 0.60 (Drinking Water & Domestic Uses) + 3 KLD (Water sprinkling) + 4 KLD (plantation).												
13	Water Source	: by Authorised hired water tankers												
14	DG Set / power	: 125 KVA (Temporary setup for Backup)												
15	Crusher	: No												
16	Nearest Water Body	: Srirampur Pond is About 1.37 Km in WNW Direction.												
17	Nearest Habitation	: Ramnathpur is about 0.960 km in SSE direction.												
18	Nearest Rail Station	: Pakur Railway Station is about 6.22 Km in NNE direction.												
19	Nearest Airport	: Deoghar Airport is about 114 Km in WSW direction.												
20	Nearest Reserved Forest	: <table border="1"> <tr> <td>SADANANDPUR PF</td><td>7.67</td><td>W</td></tr> <tr> <td>DHANGHARA FOREST</td><td>7.62</td><td>WNW</td></tr> <tr> <td>GAMCHA PF</td><td>8.27</td><td>WSW</td></tr> <tr> <td>PIARSOLA PF</td><td>8.74</td><td>WNW</td></tr> </table>	SADANANDPUR PF	7.67	W	DHANGHARA FOREST	7.62	WNW	GAMCHA PF	8.27	WSW	PIARSOLA PF	8.74	WNW
SADANANDPUR PF	7.67	W												
DHANGHARA FOREST	7.62	WNW												
GAMCHA PF	8.27	WSW												
PIARSOLA PF	8.74	WNW												
21	Road & Highways	: HIRANPUR-133A ROAD BAHUTALI ROAD AMRAPARA ROAD SAHARGAON ROAD NABINAGAR- PAKUR ROAD												

CO-ORDINATES

S. No.	Latitude	Longitude	S. No.	Latitude	Longitude
1	24° 35' 17.128" N	87° 49' 19.529" E	22	24° 35' 23.823" N	87° 49' 25.032" E
2	24° 35' 18.079" N	87° 49' 20.266" E	23	24° 35' 23.864" N	87° 49' 26.411" E

3	24° 35' 19.175" N	87° 49' 20.917" E	24	24° 35' 23.678" N	87° 49' 26.110" E
4	24° 35' 18.961" N	87° 49' 21.465" E	25	24° 35' 23.256" N	87° 49' 27.196" E
5	24° 35' 20.375" N	87° 49' 22.347" E	26	24° 35' 22.727" N	87° 49' 27.897" E
6	24° 35' 20.246" N	87° 49' 22.578" E	27	24° 35' 22.262" N	87° 49' 27.202" E
7	24° 35' 20.691" N	87° 49' 23.024" E	28	24° 35' 21.814" N	87° 49' 26.640" E
8	24° 35' 20.443" N	87° 49' 23.332" E	29	24° 35' 22.102" N	87° 49' 26.139" E
9	24° 35' 21.043" N	87° 49' 23.803" E	30	24° 35' 21.415" N	87° 49' 25.459" E
10	24° 35' 21.227" N	87° 49' 23.253" E	31	24° 35' 20.688" N	87° 49' 24.791" E
11	24° 35' 21.505" N	87° 49' 22.296" E	32	24° 35' 19.933" N	87° 49' 24.495" E
12	24° 35' 21.634" N	87° 49' 21.679" E	33	24° 35' 19.533" N	87° 49' 25.324" E
13	24° 35' 21.968" N	87° 49' 21.713" E	34	24° 35' 19.349" N	87° 49' 26.026" E
14	24° 35' 22.216" N	87° 49' 21.319" E	35	24° 35' 19.124" N	87° 49' 25.651" E
15	24° 35' 22.451" N	87° 49' 20.871" E	36	24° 35' 18.449" N	87° 49' 25.202" E
16	24° 35' 22.976" N	87° 49' 21.291" E	37	24° 35' 17.839" N	87° 49' 24.399" E
17	24° 35' 23.509" N	87° 49' 21.626" E	38	24° 35' 17.068" N	87° 49' 23.527" E
18	24° 35' 23.486" N	87° 49' 22.180" E	39	24° 35' 16.415" N	87° 49' 22.546" E
19	24° 35' 23.320" N	87° 49' 22.902" E	40	24° 35' 16.594" N	87° 49' 21.556" E
20	24° 35' 23.648" N	87° 49' 22.985" E	41	24° 35' 16.822" N	87° 49' 20.351" E
21	24° 35' 23.789" N	87° 49' 23.939" E			

LAND DETAILS

Khata no.	Plot no.
16	488
22	461 (P), 462, 463, 464, 466, 468, 467, 469 & 500

STATUTORY CLEARANCES

1	LOI / Lease docs	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 1609/M, dated 25.09.2024.
2	CO	The CO, Pakur vide letter no. 272/Ra., dated 11.03.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khailyan & Register II and also mentioned that the habitation of 17 houses at a distance of 380meters of proposed project site.
3	DMO	DMO, Pakur vide memo no. 1654/M, dated 28.09.2024 certified that 02LoI (5.585 Acre & 5.686 Acre) and 03 other mining lease area (3.66 Acre, 4.81 Acre & 6.28 Acre) exists within 500 meters radius from proposed project site and total area is 32.10 Acre or

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		12.99 Ha.
4	DFO Wild Life	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 356, dated 02.03.2023 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	Division Forest Officer, Pakur Forest Division vide memo no. 285, dated 08.02.2023 certified that the distance of forest is 1457 meters from proposed project site.
6	DSR	The DMO, Pakur has been certified vide memo no. 1653/M, dated 28.09.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 84, Page no. 150).
7	Gram Sabha	BDO, Pakur vide letter no. 2272/Vi. Dated 28.12.2022 informed that Gram Sabha conducted on 16.12.2022.
8	Mine Plan Approval	Approved by District Mining Officer, Pakur vide Memo No. 1766/M, dated 16.10.2024.
9	Qualified Person	Md. Fauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

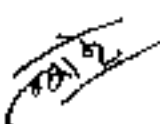
Working Details

1	Mining Method	:	OCM & Semi-Mechanised	
2	Lease Area	:	6.079 ACRES / 2.46 HA	Life of Mine – 09 years
3	Waste Generation	:	5 years– 36240.00	
4	Stripping Ratio(t/m ³)	:	1:0.07	
5	Working Days	:	300	
6	Bench: size & No	:	6m x 6m	
7	Highest Elevation of lease Area	:	43 above MSL	
8	Lowest Elevation of lease Area	:	37 above MSL	
9	Ultimate Working Depth	:	07 above MSL	
10	Water Table	:	02 above MSL	
11	Topography of Mine	:	almost flat land with hillocks	
12	Explosive Requirement	:	87.17 Kg/Day	
13	Diesel/Fuel requirement	:	440 Litres per day	

Production Details

Year	Generation of Waste/O. B in cum	Production of Stone in Cum	Production of Stone in Tonnes	Grade/Uses
1st	36240.00	38480.00	103896.00	Construction &








2nd	0.00	32000.00	86400.00	Road Construction & Road
3rd	0.00	27280.00	73656.00	Construction & Road
4th	0.00	34800.00	93960.00	Construction & Road
5th	0.00	38720.00	104544.00	Construction & Road
Total	36240.00	171280.00	462456.00	
Maximum production proposed in- 38720.00 cum/104544.00 Ton				
Stripping Ratio in (t/m3)- 1:0.07				

Land Use

LAND USE PATTERN			
	Existing	First to Fifth Years	After Life of Mine
Category	Area in Hectares	Area in Hectares	Area in Hectares
Quarry	0.000	0.88	1.76(converted into water reservoir)
Haul Road	0.00	0.04	0.00
Proposed Crusher	0.00	0.00	0.00
Green belt in Safety Zone	0.00	0.70	0.70
Dump with Parapet wall & Garland drain	0.00	0.22	Top soil will be used for plantation in first year and rest OB will be used road dressing and Backfilling
Total area in use	0.000	1.84	2.46
Balance unused area	2.46	0.62	0.00
Balance used area	0.00	0.00	0.00
Total Applied Lease Area	2.46	2.46	2.46

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Place of Plantation	Spacing b/w plants	Total No. of Plants	Area Cover in Square Meters	Total Area in Ha.	Species
1st	Safety Zone	2.5 x 2.5	1120	7000	0.70	Gulmohar, Gular, Sagwan, Sakua Fruit
	Haul Road	3 x 3	800	600M Approach Road 600/3=200Plants	---	

				200x4row=800Plant		Bearing Trees Mango, Jackfruit, Guava
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			1920	7000	0.70	

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule Issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Budget

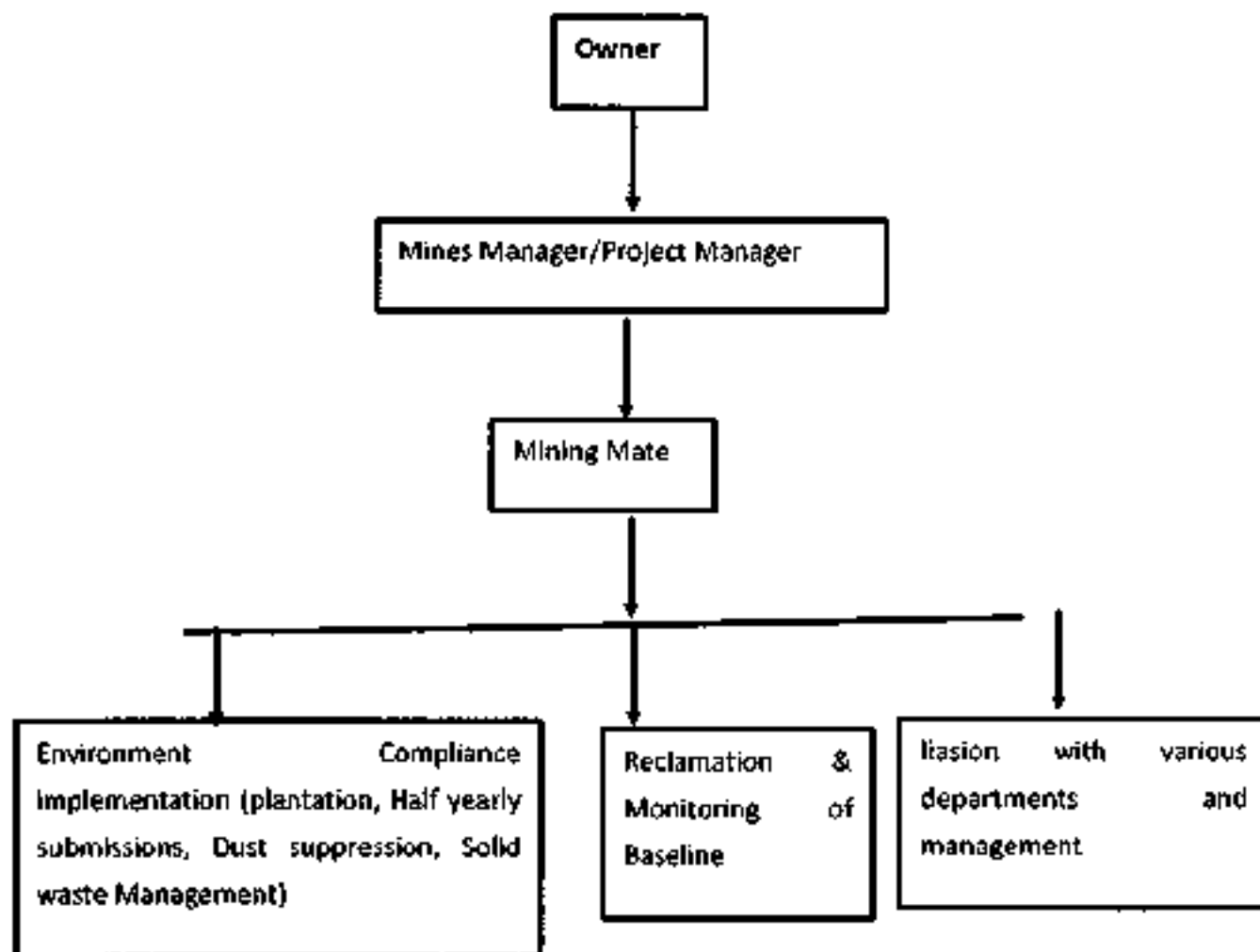
S .NO.	Particulars	Budget Provisions (Rs)	
		Capital	Recurring
Water Demand			
1(a)	Fixed Overhead water sprinkling system with solar pump for outgoing and incoming transportation vehicles for haul road and green belt Cost for 300 days for 7 KLD @5 KL tanker capacity, Rupees 500/- per tanker	1,00,000	2,10,000
	& One dedicated tanker of 5 KL for Greenbelt Management	10,00,000	50,000
1(b)	Discharge of waste water 300 days for 0.48 KLD @5 KL tanker capacity, Rupees 2000/per tanker	0	57,600
2	Prepare & Maintenance of approach road (Max. Road length 600 m, Width 4.0 m) @ 500Rs. /Meter.	3,00,000	30,000
3	Monitoring (Air, Water, Soil & Noise)	Nil	1,00,000
4	Settling tank 2 in no's (LBH 12 m* 7 m* 4 m) & Garland drains	2,00,000	30,000
5	Wire Fence 950 m x 300 /- meter	2,85,000	28,500
Plantation Scheme			
Plantation in consultation with DFO & Gram Panchayat and conversion to Grazing land as far as possible.			
6	Green belt development safety zone 7.5mtr and along the road (for each plants including hedges and fences) 1920 No. of plants x 500 Rs.	9,60,000	2,00,000

Solid Waste Management			
7	Bins 2 Nos.	1,500	4,000
8	Transport of Dry Waste	5,000	
9	Vehicle Maintenance +PUC Certification	Nil	25,000
Total EMP Budget		28,51,500	7,35,100

Blasting EMP Budget

Blasting			
	Training and Awareness of personnel during Blasting operations	50,000	0
	Provision of safe distance from the Project site for the settlements		
	* Blasting shelters and sirens	50,000	5,000
	* Portable Drop Arm Barrier	2,00,000	10,000
Total cost		3,00,000	15,000

ORGANIZATION CHART FOR ENVIRONMENT MANAGEMENT CELL



FUNCTIONS OF ENVIRONMENT MONITORING CELL

Supervision: Managed by Mines Manager with a qualified technical team.

Personnel: Includes skilled, semi-skilled, unskilled, and other third parties.

Responsibilities:

- ❖ Implement environmental control measures.

- ❖ Oversee reclamation planning and management.
- ❖ Manage air and water pollution control.
- ❖ Liaise with state and central statutory agencies.
- ❖ Develop greenbelt areas.

Performance Review: Assess corporate environmental performance and report non-compliances.

Remedial Actions: Suggest and implement actions for exceeding pollution limits.

Coordination:

Collect health statistics for workers and local population.

Act as a bridge for project implementation and Project Authorities

Facilitate afforestation efforts.

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx in the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring. Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.

- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Solid Waste Management

The waste encountered during the mining operation is mainly. During Plan period gritty soil removed will be dumped at northern side with suitable precaution. Some quantity of the removed gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

- i. **Use of Sharp Drill Bits**
- ii. **Wet Drilling** – Water will be sprinkled on the site where drilling has to be done.
- iii. **Blasting** – Blasting generate gases & dust. This effect would be mitigated by following measures.
 - Controlled blasting would be practiced.
 - Optimum quantity of explosives would be used.

- Blasting to be done during favourable weather conditions.
- iv. **Operation of Diesel Equipment's** – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.
- v. **Loading of Product on Truck** – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.
- vi. **Movement of Trucks on Road** – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken:
- Regular water sprinkling on Gaur road by using water Tankers.
 - Regular repair of Haul road.
 - All Trucks carrying stone outside lease area will have PUC certificate

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard Identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.

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- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to over charging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how

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risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonators shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the work place (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overtuning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks /tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any in coming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the mainroad (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 22, 23, 24, 25 & 26.10.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith following specific condition :-

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).
- II. The detailed EMP is to be prepared for the Habitation existing within an area of 500 meter radius of proposed project boundary. This EMP is to be included in EIA report.

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13. Shyampur Stone Mine of M/s Mandhan Minerals Corporation, Village : Shyampur, Thana : Pakur, Distt.: Pakur, Jharkhand (1.73 Ha).

(Proposal no.: SIA/JH/MIN/501860/2024)

Name of the consultant :Oceao-Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.

This is a new project which has been taken for appraisal on 23.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Terms of Reference (ToR) as per EIA notification, 2006.

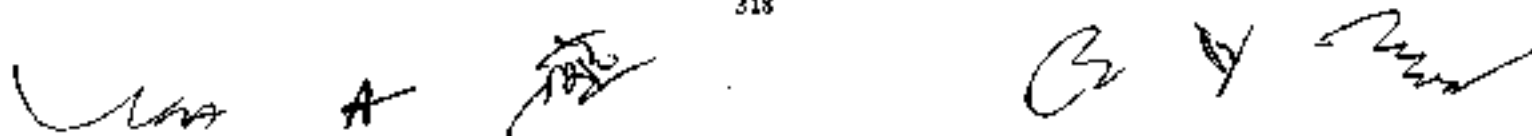
ToR Application for: Proposed Capacity: 26,048 Cum Per Annum or 70,329.60 Ton Per Annum.

Project and Location Details:

S. No	Parameter	Details
1	Project Name	: Shyampur Stone Mine
2	Lessee	: M/s Mandhan Minerals Corporation
3	Lessee Address	: R/O- at- 364 Block-B, New Ali Pore, Circus Avenue, Kolkata, west bengal-700053
4	Lease Area	: Ha: 1.73 Ha Acres: 4.27 Acres
5	Type of Land	: Raiyati Land
6	Project Cost	: 30.00 Lakhs
7	EMP Budget	: Capital: 26.43 Lakhs Recurring: 7.29 Lakhs / year
8	New or Expansion	: New
9	Mineable Reserves	: 2,63,551 Cum 7,11,587.70 Tonnes
10	Mine Life	: 10 Years
11	Man power	: 20 persons
12	Water Requirement	: Total water requirement is about 7.60 KLD=0.60 KLD (Drinking & Domestic Uses) + 4.0 (Plantation) KLD + 3.0 KLD (Dust Suppression).
13	Water Source	: by Authorised hired water tankers
14	DG Set / power	: 125 KVA (Temporary setup for Backup)
15	Crusher	: No
16	Nearest Water Body	: Shyampur Pond is about 0.16 km in NNE direction.
17	Nearest Habitation	: Chandpur Village is about 0.47 km in ENE direction
18	Nearest Rail Station	: Pakur Railway Station is about 3.91 Km in NE direction.
19	Nearest Airport	: Deoghar Airport is about 114.15 Km in WSW
20	Nearest Forest	: Chandpur P.F. is about 0.40 km in ENE direction.
21	Road & Highways	: NH-133A is about 2.76 km in N direction.

CO-ORDINATES

S.No	LATITUDE	LONGITUDE
1	24°36'42.339"N	87°49'36.754"E
2	24°36'43.119"N	87°49'36.522"E
3	24°36'43.230"N	87°49'35.583"E



4	24°36'43.428"N	87°49'34.875"E
5	24°36'44.215"N	87°49'35.109"E
6	24°36'44.812"N	87°49'34.930"E
7	24°36'46.063"N	87°49'35.084"E
8	24°36'46.978"N	87°49'35.279"E
9	24°36'47.012"N	87°49'35.706"E
10	24°36'47.992"N	87°49'35.424"E
11	24°36'48.743"N	87°49'36.673"E
12	24°36'48.779"N	87°49'37.110"E
13	24°36'48.514"N	87°49'37.490"E
14	24°36'47.610"N	87°49'37.298"E
15	24°36'46.360"N	87°49'37.359"E
16	24°36'45.677"N	87°49'37.743"E
17	24°36'45.670"N	87°49'38.319"E
18	24°36'45.492"N	87°49'39.285"E
19	24°36'45.083"N	87°49'40.151"E
20	24°36'43.784"N	87°49'40.037"E
21	24°36'42.655"N	87°49'39.873"E
22	24°36'42.436"N	87°49'38.819"E
23	24°36'42.279"N	87°49'37.816"E

LAND DETAILS

Khata no.	Plot no.
05	418, 420 (P), 421, 422 & 423
06	426 (P)
09	424, 428 & 429
18	419 (P)
22	425 & 427

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 1577/M, dated 23.09.2024
2	CO	:	The CO, Pakur vide letter no. 191/Ra., dated 15.02.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R S. Khatiyani & Register II and also mentioned that the habitation of 32 houses at a distance of 213 meters and Pond at a distance of 55 meters of proposed project site.
3	DMO	:	DMO, Pakur vide memo no. 1593/M, dated 24.09.2024 certified that 01 LoI (5.147 Acre) and 02 other mining lease area (6.83 Acre & 6.62 Acre) exists within 500 meters radius from proposed

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		project site and total area is 22.867 Acre or 9.25 Ha.
4	DFO Wild Life	DFO -cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 361, dated 02.03.2023 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	Division Forest Officer, Pakur Forest Division vide memo no. 1674, dated 05.11.2022 certified that the distance of forest is 1983 meters from proposed project site.
6	DSR	The DMO, Pakur has been certified vide memo no. 1594/M, dated 24.09.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 60, Page no. 149).
7	Gram Sabha	BCO, Pakur vide letter no. 1273/Vi. Dated 20.08.2022 informed that Gram Sabha conducted on 17.08.2022.
8	Mine Plan Approval	Approved by District Mining Officer, Pakur vide Memo No. 1765/M, dated 16.10.2024.
9	Qualified Person	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	OCM & Semi-Mechanised	
2	Lease Area	:	4.27 ACRES / 1.73HA	Life of Mine – 10 years
3	Waste Generation	:	5 years– 31,944 CUM	
4	Stripping Ratio(t/m ³)	:	1:0.09	
5	Working Days	:	300	
6	Benchess: size & No	:	6m x 6m	
7	Highest Elevation of lease Area	:	44 above MSL	
8	Lowest Elevation of lease Area	:	42 above MSL	
9	Ultimate Working Depth	:	14 above MSL	
10	Water Table	:	04 Amsl (38BGL)	
11	Topography of Mine	:	almost flat land with hillocks	
12	Explosive Requirement	:	Tentative 58.68 kg/per day	
13	Diesel/Fuel requirement	:	440 Litres per day	

Production Details

Year	Generation of Waste/O. B in cum	Production of Stone in Cum	Production of Stone in Tonnes	Grade/Uses
1st	31944.00	26048.00	70329.60	Construction & Road
2nd	0	25432.00	68666.40	

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3rd	0	22000.00	59400.00	
4th	0	22176.00	59875.20	
5th	0	25994.00	70183.80	
Total	31944.00	121650.00	328455.00	
Maximum production proposed in- 31944 Cum/328455 Ton				
Stripping Ration in (t/m3)- 1:0.09				

Land Use

LAND USE PATTERN			
	Existing	First to Fifth Years	After Life of Mine
Category	Area in Hectares	Area in Hectares	Area in Hectares
Quarry	0.00	0.70	1.28(0.17ha Backfilled and used for planation and rest 1.11 converted into water reservoir)
Haul Road	0.00	0.02	0.00
Proposed Crusher	0.00	0.00	0.00
Green belt in Safety Barrier	0.00	0.45	0.45
Dump with Parapet wall & Garland drain	0.00	0.18	Top soil will be used for plantation in first year and rest OB will be used road dressing and Backfilling
Total area in use	0.000	1.35	1.73
Balance unused area	1.73	0.38	0.00
Balance used area	0.00	0.00	0.00
Total Applied Lease Area	1.73	1.73	1.73

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Place of Plantation	Spacing b/w plants	Total No. of Plants	Area Cover in Square Meters	Total Area in Ha.	Species
1st	Safety Zone	2.5 x 2.5	720	4500	0.45	Safety Zone Peepal, Bargad, Neem, Mahua
	Haul Road	3.0 x 3.0	932	700Meter Approach Rd. Two row both side 700/3=233x4=932Plants		
2nd	Care & Protection	---	---	---	---	Along the Rd. fruit bearing trees Mango, Jack
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	

5th	Care & Protection	---	---	---	---	fruit, Guava,
Total			1552	4500	0.45	

Environment Management Budget

S.NO.	Particulars	Budget Provisions (Rs)	
		Capital	Recurring
Water Demand			
1(a)	Fixed Overhead water sprinkling system with solar pump for outgoing and incoming transportation vehicles for haul road and green belt Cost for 300 days for 7 KLD @5 KL tanker capacity, Rupees 500/- per tanker	1,00,000	2,10,000
	& One dedicated tanker of 5 KL for Greenbelt Management	10,00,000	50,000
1(b)	Discharge of waste water 300 days for 0.48 KLD @5 KL tanker capacity, Rupees 2000/per tanker	0	57,600
2	Prepare & Maintenance of approach road (Max. Road length 700 m, Width 4.0 m) @ 500Rs. /Meter.	3,35,000	35,000
3	Monitoring (Air, Water, Soil & Noise)	Nil	1,00,000
4	Settling tank 2 in no's (LBH 12 m* 7 m* 4 m) & Garland drains	2,00,000	30,000
5	Wire Fence 585 m x 300 /- meter	1,75,500	17,550
Plantation Scheme			
Plantation in consultation with DFO & Gram Panchayat and conversion to Grazing land as far as possible.			
6	Green belt development safety zone 7.5mtr and along the road (for each plants including hedges and fences) 1652 No. of plants x 500 Rs.	8,26,000	2,00,000
Solid Waste Management			
7	Bins 2 Nos.	1,500	4,000
8	Transport of Dry Waste	5,000	
9	Vehicle Maintenance +PUC Certification	Nil	25,000
Total EMP Budget		26,43,000	7,29,150

Blasting EMP Budget

Blasting			
	Training and Awareness of personnel during Blasting operations	50,000	0
	Provision of safe distance from the Project site for the settlements		
	• Blasting shelters and Sirens	50,000	5,000
	▪ Portable Drop Arm Barrier	2,00,000	10,000
	Total cost	3,00,000	15,000

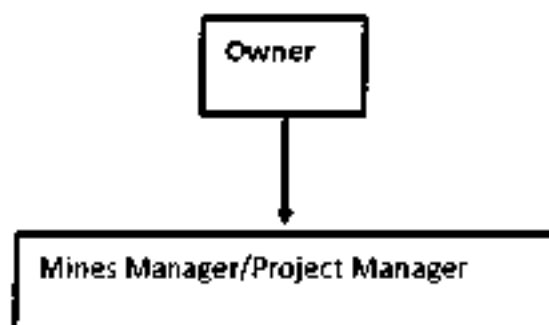
Environment Monitoring Plan (post operation)

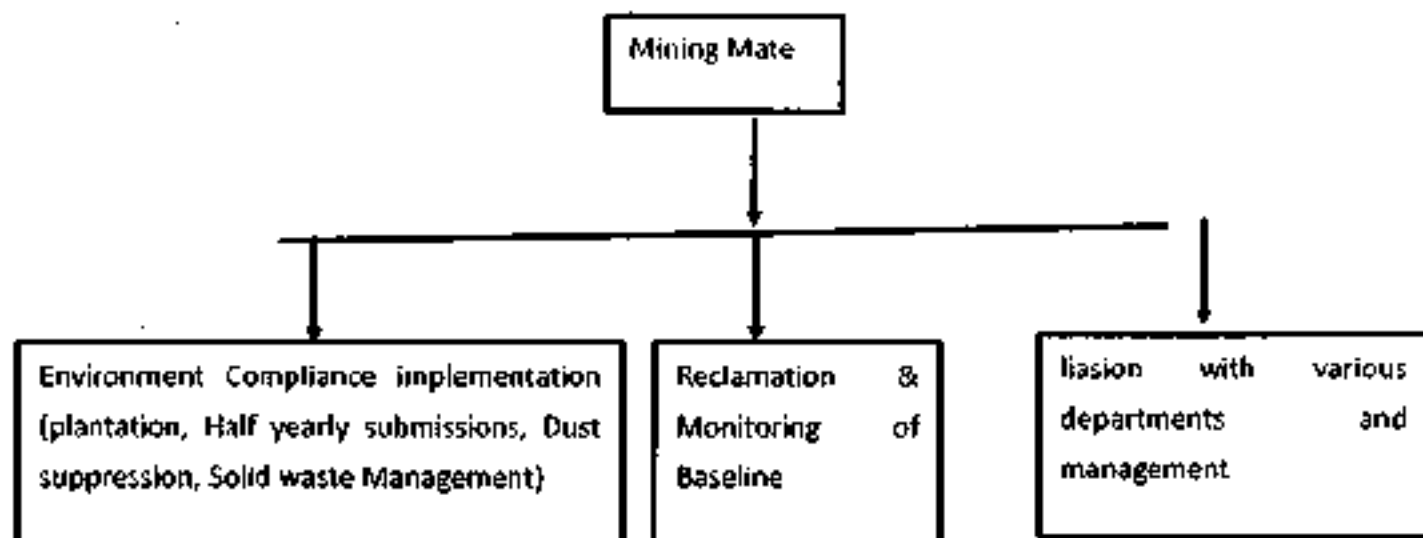
• Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx in the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

ORGANIZATION CHART FOR ENVIRONMENT MANAGEMENT CELL





MONITORING CELL

Supervision: Managed by Mines Manager with a qualified technical team.

Personnel: Includes skilled, semi-skilled, unskilled, and other third parties.

Responsibilities:

- ❖ Implement environmental control measures.
- ❖ Oversee reclamation planning and management.
- ❖ Manage air and water pollution control.
- ❖ Liaise with state and central statutory agencies.
- ❖ Develop greenbelt areas.

Performance Review: Assess corporate environmental performance and report non-compliances.

Remedial Actions: Suggest and implement actions for exceeding pollution limits.

Coordination:

Collect health statistics for workers and local population.

Act as a bridge for project implementation and Project Authorities

Facilitate afforestation efforts.

Solid Waste Management

The waste encountered during the mining operation is mainly, During Plan period gritty soil removed will be dumped at northern side with suitable precaution. Some quantity of the removed gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.

- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

i. Use of Sharp Drill Bits

ii. Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

iii. Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- d) Controlled blasting would be practiced.
- e) Optimum quantity of explosives would be used.
- f) Blasting to be done during favourable weather conditions.

iv. Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

v. Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

vi. Movement of Trucks on Road – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken:

- ✓ Regular water sprinkling on Haul road by using water Tankers.
- ✓ Regular repair of Haul road.
- ✓ All Trucks carrying stone outside lease area will have PUC certificate

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20

7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face Instability gives rise to rock falls or slides. Face Instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the Following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.

- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to over charging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.

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- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonators shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

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- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

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- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
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- Navigation signs will be provided at each and every turning point up to the mainroad (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.

- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stablized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 22, 23, 24, 25 & 26.10.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SETAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith following specific condition :-

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Nuam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).
- II. The detailed EMP is to be prepared for the Habitation & Pond existing within an area of 500 meter radius of proposed project boundary. This EMP is to be included in EIA report.

14. Talpahari Stone Mine of M/s Muni Stone Works, Village : Talpahari, Thana : Hiranpur, Distt.: Pakur, Jharkhand (2.652 Ha).

(Proposal no.: SIA/JH/MIN/501971/2024)

Name of the consultant :Oceao-Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.

This is a new project which has been taken for appraisal on 23.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Terms of Reference (ToR) as per EIA notification, 2006.

ToR Application for: Proposed Capacity: 41040.00 Cum per Year/1,10,808.00 tonnes per Year or 136.8 Cum per day/369.36 Tonnes Per day.

Project and Location Details:

S. No	Parameter	Details
1	Project Name	: "Talpahari Stone Mine" (M/s Muni Stone Works)
2	Lessee/ Director	: Shri Jaldul Shalkh
3	Lessee Address	: R/o- at Grain- Jankinagar, Post- Prithwinagar, Thana -Pakur, District- Pakur, Jharkhand
4	Lease Area	: Ha: 2.652 Ha Acres: 6.55 Acres
5	Type of Land	: Raiyati Land
6	Project Cost	: 40 Lakhs
7	EMP Budget	: Capital: 28.23 Lakhs Recurring: 7.39 Lakhs / year
8	New or Expansion	: New
9	Mineable Reserves	: 4,07,776 Cum 11,00,995 Tonnes
10	Mine Life	: 9.0 Years
11	Man power	: 30 persons
12	Water Requirement	: Total water requirement is about 7.66 KLD=0.66 KLD (Drinking & Domestic Uses) + 4.0 (Plantation) KLD + 3.0 KLD (Dust Suppression).
13	Water Source	: by Authorised hired water tankers
14	DG Set / power	: 125 KVA (Temporary setup for Backup)
15	Crusher	: No
16	Nearest Water Body	: Brahmani River is About 7.19 Km in N Direction.
17	Nearest Habitation	: Haripur is about 0.36 km in WNW direction.
18	Nearest Rail Station	: Pakdaha Harinsing Railway Station is about 5.44 Km in N direction.
19	Nearest Airport	: Sido kanhu Airport is about 31.84 Km in W direction.
20	Nearest Forest	: KARAKATA P.F 7.19 WNW
		: PURPAHAR P.F. 5.43 WSW
		: CHAIPANI P.F. 9.03 NW

21	Road & Highways	114A DUMKA - RAMPURHAT RD is 2.77 KM in N Direction. SULUNGA BENAGARIA ROAD is 2.14KM in E Direction.

CO-ORDINATES

S. No.	Latitude	Longitude	S. No.	Latitude	Longitude
1	24°41'45.422"N	87°46'36.990"E	15	24°41'45.365"N	87°46'43.538"E
2	24°41'46.201"N	87°46'37.561"E	16	24°41'44.540"N	87°46'43.551"E
3	24°41'47.516"N	87°46'37.754"E	17	24°41'44.205"N	87°46'45.057"E
4	24°41'47.797"N	87°46'39.680"E	18	24°41'43.334"N	87°46'44.858"E
5	24°41'46.911"N	87°46'40.859"E	19	24°41'43.110"N	87°46'45.337"E
6	24°41'47.552"N	87°46'40.874"E	20	24°41'42.208"N	87°46'45.064"E
7	24°41'47.422"N	87°46'41.424"E	21	24°41'41.667"N	87°46'44.913"E
8	24°41'48.578"N	87°46'41.779"E	22	24°41'42.138"N	87°46'43.402"E
9	24°41'48.458"N	87°46'42.408"E	23	24°41'42.602"N	87°46'42.099"E
10	24°41'49.013"N	87°46'42.929"E	24	24°41'43.492"N	87°46'42.203"E
11	24°41'48.839"N	87°46'43.817"E	25	24°41'44.113"N	87°46'40.678"E
12	24°41'48.584"N	87°46'44.203"E	26	24°41'44.376"N	87°46'39.209"E
13	24°41'47.135"N	87°46'44.059"E	27	24°41'44.546"N	87°46'38.010"E
14	24°41'46.320"N	87°46'43.894"E			

LAND DETAILS

Khata no.	Plot no.
37	1491, 1492 & 1493
52	1240, 1241, 1494, 1495, 1509 & 1510

STATUTORY CLEARANCES

1	LOI / Lease docs	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 1352/M, dated 22.08.2024.
2	CO	The CO, Hiranpur vide letter no. 315/Ra., dated 26.06.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyari & Register II and also mentioned that the habitation of 05 houses at a distance of 300 meters of proposed project site.
3	DMO	DMO, Pakur vide memo no. 1437/M, dated 05.09.2024 certified that 03 other mining lease area (2.60 Acre, 3.04 Acre & 6.35 Acre) exists within 500 meters radius from proposed project site and total area is 18.54 Acre or 7.50 Ha.

4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2187, dated 06.09.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide letter no. 893, dated 26.06.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 1438/M, dated 05.09.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 47, Page no. 119).
7	Gram Sabha	:	BDO, Hiranpur vide letter no. 647/Vi., dated 16.07.2024 informed that Gram Sabha conducted on 12.07.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 1782/M, dated 17.10.2024.
9	Qualified Person	:	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	OCM & Semi-Mechanised	
2	Lease Area	:	6.55 ACRES / 2.652 HA	Life of Mine – 9.0 years
3	Waste Generation	:	5 years– 58270.00	
4	Stripping Ratio(t/m ³)	:	1:0.11	
5	Working Days	:	300	
6	Bench: size & No	:	6m x 6m	
7	Highest Elevation of lease Area	:	40 above MSL	
8	Lowest Elevation of lease Area	:	37 above MSL	
9	Ultimate Working Depth	:	21 above MSL	
10	Water Table	:	5 above MSL	
11	Topography of Mine	:	almost flat land with hillocks	
12	Explosive Requirement	:	92.26 kg	
13	Diesel/Fuel requirement	:	440 Litres per day	

Production Details

Year	Production of Stone in Cum	Production of Stone in Tonnes	Overburden in cum
1st	29395.00	79366.50	37760.00

2nd	41040.00	110808.20	24510.00
3rd	37125.00	100237.00	0.00
4th	31440.00	90288.00	0.00
5th	39250.00	105975.60	0.00
Total	180250.00	486675.00	58270.00

Land Use

LAND USE PATTERN			
Category	Existing	First to Fifth Years	After Life of Mine
	Area In Hectares	Area in Hectares	Area in Hectares
Quarry	0.00	1.63	2.022 converted into water reservoir
Haul Road	0.00	0.03	0.00
Proposed Crusher	0.00	0.000	0.00
Green belt In Safety Barrier	0.00	0.63	0.63
Dump with Parapet wall & Garland drain	0.00	0.362	Top soil will be used for plantation in first year and rest OB will be used road dressing and Backfilling
Total area in use	0.000	2.652	2.652
Balance unused area	2.652	0.00	0.00
Balance used area	0.00	0.00	0.00
Total Applied Lease Area	2.625	2.652	2.652

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Place of Plantation	Spacing b/w plants	Total No. of Plants	Area Cover in Square Meters	Total Area in Ha.	Species
1st	Safety Zone	2.5 x 2.5	1008	6300	0.63	Neem, Mahua, Bargad, Peepal <u>Fruit Bearing Trees</u> Mango, Jackfruit, Guava, Jamun
	Haul Road	3 x 3	868	650 Meter Approach Rd. Two row both side $650/3=217 \times 4=868$ Plant	---	
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care &	---	---	---	---	

	Protection					
Total			1876	6300	0.63	

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

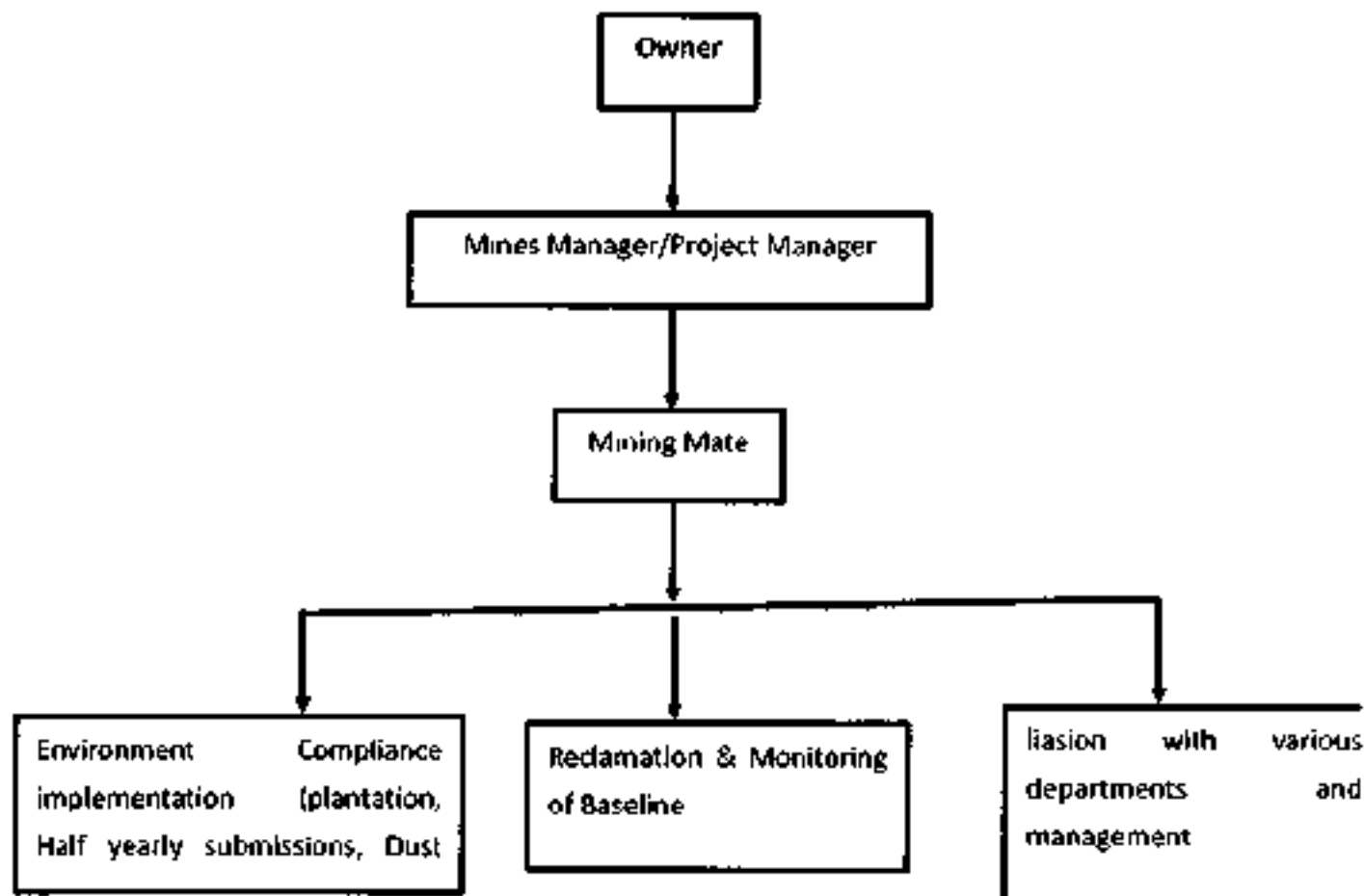
Environment Management Budget

S.NO.	Particulars	Budget Provisions (Rs)	
		Capital	Recurring
Water Demand			
1(a)	Fixed Overhead water sprinkling system with solar pump for outgoing and incoming transportation vehicles for haul road and green belt Cost for 300 days for 7 KLD @5 KL tanker capacity, Rupees 500/- per tanker	1,00,000	2,10,000
	& One dedicated tanker of 5 KL for Greenbelt Management	10,00,000	50,000
1(b)	Discharge of waste water 300 days for 0.52 KLD @5 KL tanker capacity, Rupees 2000/per tanker	0	62,400
2	Prepare & Maintenance of approach road (Max. Road length 650 m, Width 4.0 m) @ 500Rs. /Meter.	3,25,000	32500
3	Monitoring (Air, Water, Soil & Noise)	Nil	1,00,000
4	Settling tank 2 In no's (LBH 12 m* 7 m* 4 m) & Garland drains	2,00,000	30,000
5	Wire Fence 846 m x 300 /- meter	2,53,800	25,380
Plantation Scheme			
Plantation in consultation with DFO & Gram Panchayat and conversion to Grazing land as far as possible.			
6	Green belt development safety zone 7.5mtr and along the road (for each plants including hedges and fences) 1876 No. of plants x 500 Rs.	9,38,000	2,00,000
Solid Waste Management			
7	Blns 2 Nos.	1,500	4,000
8	Transport of Dry Waste	5,000	
9	Vehicle Maintenance +PUC Certification	Nil	25,000
Total		2,823,300	739280

Blasting EMP Budget

Blasting			
	Training and Awareness of personnel during Blasting operations	50,000	0
	Provision of safe distance from the Project site for the settlements		
	• Blasting shelters and Sirens	50,000	5,000
	• Portable Drop Arm Barrier	2,00,000	10,000
	Total cost	3,00,000	15,000

Organization Chart for Environment Management Cell



FUNCTIONS OF ENVIRONMENT MONITORING CELL

FUNCTIONS OF ENVIRONMENT MONITORING CELL

- **Supervision:** Managed by Mines Manager with a qualified technical team.
- **Personnel:** Includes skilled, semi-skilled, unskilled, and other third parties.
- **Responsibilities:**
 - ✓ Implement environmental control measures.
 - ✓ Oversee reclamation planning and management.
 - ✓ Manage air and water pollution control.
 - ✓ Liaise with state and central statutory agencies.
 - ✓ Develop greenbelt areas.
- **Performance Review:** Assess corporate environmental performance and report non-compliances.

- Remedial Actions: Suggest and implement actions for exceeding pollution limits.
- Coordination:

Collect health statistics for workers and local population.

Act as a bridge for project implementation and Project Authorities

Facilitate afforestation efforts.

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx in the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- The Boundary Pillars of the proposed mine lease area will be maintained properly.
- One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.

- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Solid Waste Management

The waste encountered during the mining operation is mainly. During Plan period gritty soil removed will be dumped at northern side with suitable precaution. Some quantity of the removed gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

i. Use of Sharp Drill Bits

ii. Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

iii. Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced.
- Optimum quantity of explosives would be used.
- Blasting to be done during favourable weather conditions.

iv. Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

v. Loading of Product on Truck – Water will be sprinkled on blasted stone mass before

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they are loaded to trucks for transport.

vi. **Movement of Trucks on Road** – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken:

- Regular water sprinkling on Haul road by using water Tankers
- Regular repair of Haul road.
- All Trucks carrying stone outside lease area will have PUC certificate

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.

- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the

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drill hole continuously and discharges the same in a dust collector specially provided for the purpose.

- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to over charging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted

by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the Initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidt etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonators shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the work place (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

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Transportation

The usual method of transporting minerals from the working face is by trucks /tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any in coming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 22, 23, 24, 25 & 26.10.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith following specific condition :-

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).
- II. The detailed EMP is to be prepared for the Habitation existing within an area of 500 meter radius of proposed project boundary. This EMP is to be included in EIA report.

15. Anguthia Stone Mine of M/s Sukhi Stone Works, Village : Anguthia, Thana no. : 109, Distt.: Pakur, Jharkhand (2.122 Ha).

(Proposal no.: SIA/JH/MIN/502090/2024)

Name of the consultant :Oceao-Enviro Management Solutions (India) Pvt. Ltd., Ghaziabad, U.P.

This is a new project which has been taken for appraisal on 23.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Terms of Reference (ToR) as per EIA notification, 2006.

ToR Application for: Proposed Capacity: 48,433 Cum per Year/1,30,769 tonnes per Year

Project and Location Details:

S. No	Parameter		Details
1	Project Name	:	Anguthiya Stone Mine
2	Lessee/ Director	:	Shri Rajoo Shelkh
3	Lessee Address	:	Village- Bikrampur Post- Nabinagar, District- Pakur, Jharkhand
4	Lease Area	:	Ha: 2.122 Ha Acres: 5.24 Acres
5	Type of Land	:	Raiyati Land
6	Project Cost	:	37 Lakhs
7	EMP Budget	:	Capital: 32.86 Lakhs Recurring: 6.6 Lakhs / year
8	New or Expansion	:	New
9	Mineable Reserves	:	388288 Cum 10,48,380 Tones
10	Mine Life	:	08 Years
11	Man power	:	22 persons
12	Water Requirement	:	Total water requirement is about 7.66 KLD = 0.66 KLD (Drinking & Domestic Uses) + 4.0 (Plantation) KLD + 3.0 KLD (Dust Suppression).
13	Water Source	:	The drinking water will be available from nearby village by tractor tank manually by labors at the site.
14	DG Set / power	:	125 KVA (Temporary setup for Backup)
15	Crusher	:	Not Proposed
16	Nearest Water Body	:	Check Dam (ACF) is about 5.17 km in ENE direction. Gola Lake is about 12.86 km in ENE direction.

17	Nearest Habitation	:	Pipurojori Is about 0.72 km in E direction		
18	Nearest Rail Station	:	Kotalpukur Railway station, Pakur is about 3.64 km in E direction.		
19	Nearest Airport	:	Sido Kanhu Airport is about 77.46 km in SW direction.		
20	Nearest Forest	:	BAHADURPUR SHAL FOREST	6.54	E
			BAGDABRA SHAL FOREST	4.83	E
			GUMAPAHAR PF	11.05	WNW
21	Road & Highways	:	Nearest NH-333A is 10.21 KM away from the mine site in WSW direction. Nearest NH -133A is 5.48 KM away from the mine site in WNW direction.		

CO-ORDINATES

S. No.	Latitude	Longitude	S. No.	Latitude	Longitude
1	24°44'43.214"N	87°47'17.776"E	29	24°44'47.639"N	87°47'13.843"E
2	24°44'43.360"N	87°47'17.134"E	30	24°44'47.881"N	87°47'13.507"E
3	24°44'43.875"N	87°47'16.661"E	31	24°44'48.227"N	87°47'13.662"E
4	24°44'44.096"N	87°47'16.283"E	32	24°44'48.358"N	87°47'13.400"E
5	24°44'44.259"N	87°47'15.911"E	33	24°44'48.617"N	87°47'13.476"E
6	24°44'44.521"N	87°47'15.906"E	34	24°44'48.920"N	87°47'12.808"E
7	24°44'44.665"N	87°47'15.482"E	35	24°44'49.341"N	87°47'12.282"E
8	24°44'44.811"N	87°47'15.051"E	36	24°44'49.469"N	87°47'12.783"E
9	24°44'45.171"N	87°47'15.182"E	37	24°44'49.174"N	87°47'13.682"E
10	24°44'45.453"N	87°47'15.591"E	38	24°44'49.218"N	87°47'14.560"E
11	24°44'45.952"N	87°47'15.831"E	39	24°44'49.323"N	87°47'15.537"E
12	24°44'46.390"N	87°47'16.060"E	40	24°44'49.620"N	87°47'16.434"E
13	24°44'46.487"N	87°47'15.350"E	41	24°44'48.923"N	87°47'16.384"E
14	24°44'45.946"N	87°47'15.204"E	42	24°44'48.877"N	87°47'18.259"E
15	24°44'45.836"N	87°47'14.490"E	43	24°44'48.368"N	87°47'18.245"E
16	24°44'45.300"N	87°47'14.014"E	44	24°44'48.275"N	87°47'16.909"E
17	24°44'44.656"N	87°47'13.190"E	45	24°44'47.519"N	87°47'16.872"E
18	24°44'44.527"N	87°47'12.532"E	46	24°44'46.807"N	87°47'17.212"E
19	24°44'44.211"N	87°47'12.097"E	47	24°44'45.732"N	87°47'16.268"E
20	24°44'44.955"N	87°47'11.105"E	48	24°44'45.360"N	87°47'16.695"E
21	24°44'45.500"N	87°47'10.042"E	49	24°44'45.134"N	87°47'17.166"E
22	24°44'46.220"N	87°47'10.336"E	50	24°44'45.207"N	87°47'17.511"E
23	24°44'47.067"N	87°47'10.909"E	51	24°44'44.728"N	87°47'17.280"E
24	24°44'47.655"N	87°47'11.357"E	52	24°44'44.291"N	87°47'17.161"E
25	24°44'47.963"N	87°47'11.553"E	53	24°44'44.146"N	87°47'17.671"E
26	24°44'48.257"N	87°47'11.955"E	54	24°44'44.013"N	87°47'18.139"E
27	24°44'47.775"N	87°47'12.544"E	55	24°44'43.661"N	87°47'17.942"E
28	24°44'46.943"N	87°47'13.636"E			

LAND DETAILS

Khata no.	Plot no.

25	445 (P), 446 (P), 448, 450, 453 (P), 458, 459, 466, 475, 477 & 478

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 1643/M, dated 28.09.2024.
2	CO	:	The CO, Hiranpur vide letter no. 453/Ra, dated 14.08.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyani & Register II.
3	DMO	:	DMO, Pakur vide memo no. 1672/M, dated 01.10.2024 certified that 02 other mining lease area (5.94 Acre & 5.25 Acre) and LoI (8.34 Acre) exists within 500 meters radius from proposed project site and total area is 17.43 Acre or 7.05 Ha.
4	DFO Wild Life	:	DFO -cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2333, dated 23.09.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide letter no. 1607, dated 13.09.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 1671/M, dated 01.10.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 11, Page no. 118).
7	Gram Sabha	:	BDO, Hiranpur vide letter no. 774/Vi., dated 17.08.2024 informed that Gram Sabha conducted on 10.08.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 1820/M, dated 19.10.2024.
9	Qualified Person	:	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	OCM & Semi-Mechanised	
2	Lease Area	:	5.24 ACRES / 2.603 HA	Life of Mine – 08 years
3	Waste Generation	:	5 years– 22838	
4	Stripping Ratio(t/m ³)	:	1:0.05	
5	Working Days	:	300	

6	Bench: size & No	:	6m x 6m
7	Highest Elevation of lease Area	:	41 MSL
8	Lowest Elevation of lease Area	:	40 MSL
9	Ultimate Working Depth	:	11 MSL
10	Water Table	:	5 MSL
11	Topography of Mine	:	almost flat land with hillocks
12	Explosive Requirement	:	64.63 Kg
13	Diesel/Fuel requirement	:	440 Litres per day

Production Details

Year	Generation of Waste/O. B in cum	Production of Stone in Cum	Production of Stone in Tonnes	Grade/Uses
1st	15678.00	22224.00	60004.80	Construction & Road
2nd	0.00	31240.00	84348.00	Construction & Road
3rd	0.00	31773.00	85787.10	Construction & Road
4th	0.00	35145.00	94891.50	Construction & Road
5th	6160.00	48433.00	130769.10	Construction & Road
Total	22838.00	168815.00	455800.50	
Stripping Ratio in (t/m ³)- 1:0.05				

Land Use

LAND USE PATTERN			
	Existing	First to Fifth Years	After Life of Mine
Category	Area in Hectares	Area in Hectares	Area in Hectares
Quarry	0.00	0.91	1.29ha(0.13ha area backfilled and used for planation) 1.16ha converted into water reservoir.
Haul Road	0.00	0.02	0.00
Proposed Crusher	0.00	0.000	0.00
Green belt in Safety Barrier	0.00	0.83	0.83
Dump with Parapet wall & Garland drain	0.00	0.00	Top soil will be used for plantation in first year and rest OB will be used road dressing and Backfilling
Total area in use	0.00	1.76	2.12

Balance unused area	2.12	0.36	0.00
Balance used area	0.00	0.00	0.00
Total Applied Lease Area	2.12	2.12	2.12

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Place of Plantation	Spacing b/w plants	Total No. of Plants	Area Cover in Square Meters	Total Area in Ha.	Species
1st	Safety Zone	2.5 x 2.5	1328	8300	0.83	<u>Safety Zone</u> <u>Neem</u> Mahua, Bargad, Peepal, Plas, <u>fruit bearing</u> <u>Aam,</u> <u>Kathal,</u> <u>Amrood,</u> <u>Jamun</u>
	Haul Road	3.0 x 3.0	1068	800 Meter Approach Rd. Two row both side $800/3=267*4=1068$ Plant		
	Lease area	2.5 x 2.5	176		0.11	
2nd	Care & Protection	---	---	-	---	<u>Aam,</u> <u>Kathal,</u> <u>Amrood,</u> <u>Jamun</u>
3rd	Care & Protection	---	---	-	---	
4th	Care & Protection	---	---	-	---	
5th	Care & Protection	---	---	-	---	<u>Aam,</u> <u>Kathal,</u> <u>Amrood,</u> <u>Jamun</u>
			2572	7240	0.94	

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Budget

S.NO.	Particulars	Budget Provisions (Rs)	
		Capital	Recurring
Water Demand			
1(a)	Fixed Overhead water sprinkling system with solar pump for outgoing and incoming transportation vehicles for haul road and green belt Cost for 300 days for 7 KLD @5 KL tanker capacity, Rupees 500/- per tanker	1,00,000	2,10,000
	& One dedicated tanker of 5 KL for Greenbelt Management	10,00,000	50,000

1(b)	Discharge of waste water 300 days for 0.44 KLD @5 KL tanker capacity, Rupees 2000/per tanker	0	52,800
2	Prepare & Maintenance of approach road (Max. Road length 800 m, Width 4.0 m) @ 500Rs. /Meter.	4,00,000	40,000
3	Monitoring (Air, Water, Soil & Noise)	Nil	1,00,000
4	Settling tank 2 in no's (LBH 12 m* 7 m* 4 m) & Garland drains	2,00,000	30,000
5	Wire Fence 1102 m x 300 /- meter	330600	-
Plantation Scheme			
Plantation in consultation with DFO & Gram Panchayat and conversion to Grazing land as far as possible.			
6	Green belt development safety zone 7.5mtr and along the road (for each plants including hedges and fences) 2572 No. of plants x 500 Rs.	1286000	3,00,000
Solid Waste Management			
7	Bins 2 Nos.	1,500	4,000
8	Transport of Dry Waste	5,000	
9	Vehicle Maintenance +PUC Certification	Nil	25,000
Total EMP Budget		33,23,100	3,29,000

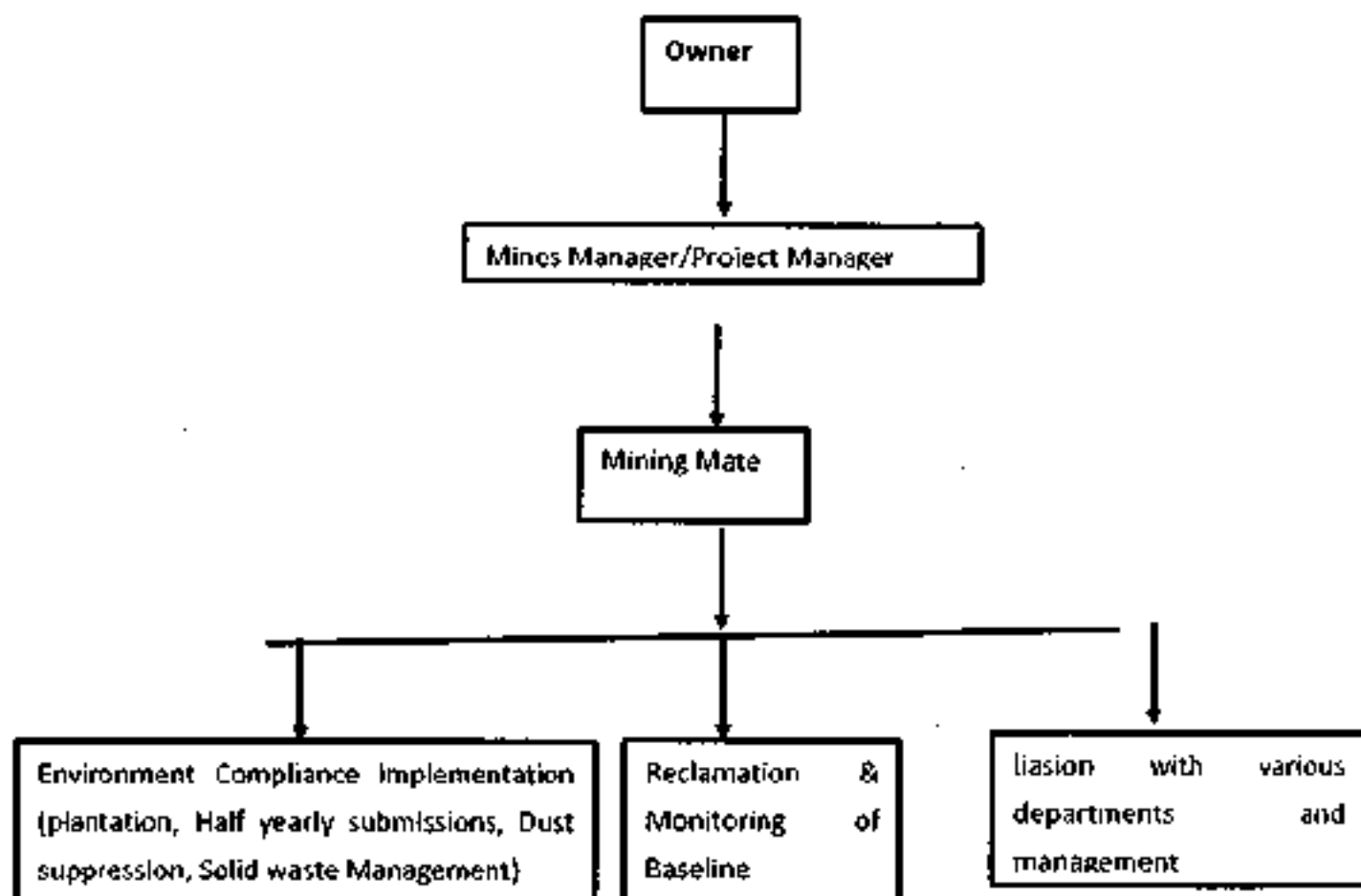
Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx in the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

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ORGANIZATION CHART FOR ENVIRONMENT MANAGEMENT CELL



FUNCTIONS OF ENVIRONMENT MONITORING CELL

Supervision: Managed by Mines Manager with a qualified technical team.

Personnel: Includes skilled, semi-skilled, unskilled, and other third parties.

Responsibilities:

- ❖ Implement environmental control measures.
- ❖ Oversee reclamation planning and management.
- ❖ Manage air and water pollution control.
- ❖ Liaise with state and central statutory agencies.
- ❖ Develop greenbelt areas.

Performance Review: Assess corporate environmental performance and report non-compliances.

Remedial Actions: Suggest and implement actions for exceeding pollution limits.

Coordination:

Collect health statistics for workers and local population.

Act as a bridge for project implementation and Project Authorities

Facilitate afforestation efforts.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.

- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Solid Waste Management

The waste encountered during the mining operation is mainly. During Plan period gritty soil removed will be dumped at northern side with suitable precaution. Some quantity of the removed gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Deslited water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

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Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

i. Use of Sharp Drill Bits

ii. Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

iii. Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced.
- Optimum quantity of explosives would be used.
- Blasting to be done during favourable weather conditions.

iv. Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

v. Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

vi. Movement of Trucks on Road – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken:

- Regular water sprinkling on Gaur road by using water Tankers.
- Regular repair of Haul road.
- All Trucks carrying stone outside lease area will have PUC certificate

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard Identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tipping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging [Regulation 106(5) of MMR 1961]

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to over charging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.

- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department.

Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place
- Explosives shall be conveyed in special containers.
- Explosives and detonators shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the work place (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)

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- Untrained drivers
- Overtuning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks /tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any in coming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the mainroad (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 22, 23, 24, 25 & 26.10.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith following specific condition :-

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).

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16. Proposed Medical College, Hospital, Hostel, Residences – (Director type 2, 3 & 4 BHK), Community Centre, Student Recreation by Jharkhand State Building Construction Corporation Limited (Govt. of Jharkhand Undertaking) at Sector 12 Pipratand, Thana no. : 36. Thana : Chas, Distt. : Bokaro, Jharkhand.

(Proposal No : SIA/JH/INFRA2/ 478495/2024)

Name of the consultant : Rian Enviro Pvt. Ltd., Patna, Bihar.

This is a new project which has been taken for appraisal on 23.10.2024.

Project Sector: S(a) Building & Construction Project, Category: B2.

Application for Environmental Clearance as per EIA notification, 2006.

State Government Jharkhand has proposed to develop Medical College, Hospital, Hostel, Residences-(Director type 2, 3 & 4 BHK), Community Centre, Student Recreation on the total land area measuring 1,00,362 Sq. m located at Sector 12 Pipratand, Thana No. 36, Thana- Chas, Dist- Bokaro, State- Jharkhand. The total build-up area is 1,34,413.7 sqm.

Salient Features of the Project

Sr. No.	Particulars	
1.	Latitude	23°38'1.79"N- 23°37'46.54"N
2.	Longitude	86°8'21.93"E-86°8'30.65"E
3.	Plot area	1,00,362 Sq. m
4.	Proposed FAR	1.28
5.	Proposed Built-up Area	134413.7
6.	Total Parking area Proposed	7,111 Sqm.
7.	Ground Coverage @26.85%	26,953.18 Sqm.
8.	Ground Coverage @26.85%	50,372.04 Sqm.
9.	Green Belt Area (Hard Green) @ 21 % of plot area	21076.02 sqm
10.	Soft Green area	29296.02 sqm
11.	Medical Liquid Oxygen Plant (LMO)	30 KL
12.	Rain Water Harvesting Pits (with size)	20 Nos.
13.	STP Capacity	520 KLD
14.	ETP Capacity	12 KLD
15.	Maximum Height of the Building (m)	Approx. 30 m
16.	Power Requirement	5508 KVA
17.	Power Backup	DG set with total power generation capacity of 3020 KVA (2*1010 KVA and 2*500 KVA). All DG Sets shall be outdoor type with hospital type silencer, acoustic enclosure as per CPCB, and other relevant norms & with provision of DG sets proper shading

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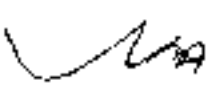
18.	Total Water Requirement		~699 KLD
19.	Fresh/Domestic Water Requirement		~309 KLD
20.	Reuse of Recycled Water		~390 KLD
21.	Waste Water Generated		~433 KLD
22.	Solid Waste Generated (Operational)		~2486 Kg/day
23.	Biodegradable Waste (Operational)		~ 994 Kg/day
24.	Non-Biodegradable Waste (Operational)		~ 1492 Kg/day
25.	Bio-medical waste generated		~550 Kg/day
24.	Types of Buildings		Hospital, Medical college, ESS, Hostel, Director Residence
25.	Basement		1
26.	Maximum Height		~30 M
27.	Total Cost of the project		688.49 Corers
28.	Construction Phase:	i) Water Requirement & Source	Fresh water – 9 KLD Treated wastewater-12 KLD Source: Tanker water supply
		ii) STP (Modular)	7 KLD

Detailed Area Statement

S. No.	Details	Area	
1	Total Plot area	100362	sqm.
2	Permissible FAR	2.5	
3	Total FAR Achieved	1.28	
4	Hospital Building Built-up area	53186.08	sqm.
5	Medical College Built-up area	23047.55	
6	Residence Quarter Built-up area	21213.5	
7	Hostels Built-up area	22551.01	
8	Miscellaneous	7304.56	
9	Residential Building Non-FAR area	0	sqm.
10	Parking Area Provided (Stilt)	1479	
11	Parking Area Provided (Basement)	5632	
12	Total Built-up Area	134413.7	Sqm
13	Proposed Ground Coverage @26.85%	26953.18	Sqm
14	Total Proposed Ground Coverage	26953.18	Sqm
15	Total no. of bed 500 (9 No. of Blocks, G+8, 16 unit per Blocks), 9x9x16		No.
16	Green Cover area Provided @50.1% Hard Green @ 21%= 21076.02 m ² , Soft Green = 29296.02 m ²	50372.04	sqm
17	Road Area	17106.78	sqm
18	Open Area	74217.82	sqm
19	STP & ETP	456.47	sqm

LAND DETAILS

S. No.	Khata No.	Plot No.	Total Area allotted (acre)
1.	1	307	0.03
2.	1	314	0.04
3.	1	315	0.05
4.	1	322	0.02
5.	1	326	0.22
6.	1	98	1.70
7.	1	105	0.15
8.	1	106	0.98
9.	1	107	0.26
10.	1	108	0.30
11.	1	109	0.09
12.	1	110	0.15
13.	3	44	0.12
14.	3	88	0.18
15.	3	89	0.13
16.	3	89/761	0.29
17.	7	324	0.12
18.	7	344	0.22
19.	7	252	0.01
20.	7	253	0.15
21.	8	95	0.52
22.	10	342	0.44
23.	12	36	0.36
24.	12	46	1.20
25.	12	47	0.54
26.	12	48	1.04
27.	12	49	0.24
28.	12	50	0.08
29.	12	51	0.35
30.	12	52	0.56
31.	12	53	0.01
32.	12	55	0.17
33.	12	90	0.57
34.	12	91	0.24
35.	12	92	0.73
36.	12	94	0.62
37.	13	320	0.45
38.	13	346	0.35








39.	13	347	0.01
40.	13	104	0.02
41.	14	328	0.18
42.	14	341	2.00
43.	14	343	0.20
44.	14	99	0.20
45.	15	97	2.89
46.	18	325	0.16
47.	18	327	0.71
48.	18	330	0.16
49.	18	332	0.52
50.	18	96	0.43
51.	20	329	0.15
52.	20	333	0.11
53.	20	334	0.04
54.	20	335	0.85
55.	21	331	0.85
56.	21	100	0.52
57.	23	323	0.07
58.	24	260	0.00
59.	24	87	0.40
60.	24	93	0.39
61.	14	112	0.03
62.	16	341/751	0.02
63.	16	342/752	0.21
After Deduction of Plot number 345			24.80 Acre (100362 sqm)

Details of Site Surroundings and Connectivity

Connectivity & Site Surroundings			
S. No.	Description		Distance and Direction
1.	Nearest Railway Station	Bokaro Railway Station	Approx. 6.0 Km towards NW.
2.	Nearest Airport	Bokaro Airport Birsa Munda International Airport	Approx. 1.5 km towards NE Approx. 90 km towards SW.
3.	Nearest Village	Kasna Surajpur Site V Khanpur	Approx. 1.14 km towards NNE Approx 0.91 Km towards ESE. Approx 3.65 Km towards East.
4.	Nearest Highway/Roads	NH 320	Adjacent to project site

5.	Nearest School & College	School: Bokaro Ispat Vidyalaya Govt. School, Siwandih R.V.S College	Approx. 1.07 km towards NNE Approx. 2.20 km towards WNW Approx. 0.6 km towards East
6.	Nearest Hospital	Govt. Hospital & Medicine Medicant Hospital & Research Centre Sadar Hospital, Bokaro	Approx. 1.50 km towards ESE Approx. 0.20 km towards WSW Approx. 2.08 km towards NE
7.	Places of worship	Durga Temple, Chas Ukrid Makka Masjid The Pentecostal Assembly Church	Approx. 2.50 km towards ENE Approx. 1.25 km towards WNW Approx. 0.75 km towards NNW
8.	Water Bodies	Ganga River Ganga Dam Damodar River	Approx. 0.5 km towards ESE Approx. 5.75 km towards West Approx. 10.5 km towards NNE
9.	Nearest Town	Bokaro	The project is in Bokaro City.
10.	Wetland	Not available in 15 km radius of the project site	

Details of Building Blocks

Block No.	Building Name	No. Of Floors	Proposed Facility
1	HOSPITAL	B+G+5	500 beds
2	MEDICAL COLLEGE	G+5	500 students
3	AUDITORIUM	G+1	
4	GUEST HOUSE	G+3	1 Person/Unit (Total Unit-28)
5	GIRLS HOSTEL	G+7	250
6	BOYS HOSTEL	G+7	250
7	INTERN'S HOSTEL (M/F)	G+5	--
8	NURSES HOSTEL	G+6	270
9	RESIDENT DOCTOR HOSTEL	S+5	120
10	TYPE-III	S+8	5 Person/Unit (Total Unit-32)
11	TYPE-IV	S+8	6 Person/Unit (Total Unit-64)
12	TYPE-V	S+8	7 Person/Unit (Total Unit-16)
13	TYPE-VI	G+1	7 Person/Unit (Total Unit-2)
14	COMMUNITY CENTRE	G	
15	STUDENT RECREATION CENTRE	G+1	
16	MORTUARY	B	
17	BMW	G	
18	ESS	G+1	
19	PATIENT RELATIVE ACCOMODATION	G+3	130
20	STP. & ETP.	B	
21	GUARD ROOM	G	
22	U.G.T.	B	

Calculation of Population

Type of building	Unit	Population
Hospital	500 Bed	500
Hospital Staff	3000	3000
Medical College	500 Students	500
Auditorium	500	500
Guest House	1 Person/Unit (Total Unit-28)	28
Girls Hostel	270	270
Boys Hostel	270	270
Intern's Hostel Female	60	60
Intern's Hostel Male	60	60
Nurses Hostel	207	207
Resident Doctor Hostel	120	120
Type-III	5 Person/Unit (Total Unit-32)	160
Type-IV	6 Person/Unit (Total Unit-64)	384
Type-V	7 Person/Unit (Total Unit-16)	112
Type-VI	7 Person/Unit (Total Unit-2)	14
Community Centre		175
Student Recreation Centre	500 Students	500
Patient Relative Accommodation	130	130
Grand Total		6990

Parking Details

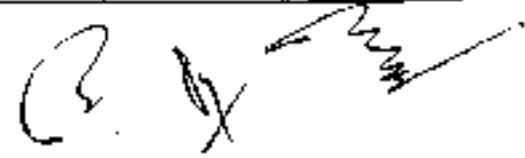
Sl. No.	Particulars	Area (in sqm).	ECS provided
1.	Open Parking	6739	293
2.	Stilt Parking	1479	51
3.	Basement Parking	5632	520
4.	Total	13850	864

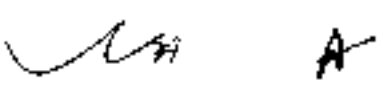
Calculation of Greenbelt

Total Plot Area	1,00,362 Sq. m
Green Cover area Provided @50.19% Hard Green @ 21% i.e 21076.02 m ² , Soft Green = 29296.02 m ²	50,372.04 Sqm.
Total No. of Trees will be Planted @ 1 tree per 80 Sqm. of Plot Area	630 Nos.

Details of Water Requirement

Sl. No	Description	Total Population	Water Req./Person in LPCD	Fresh water (Litres)	Flushing Water (Litres)	Total water Requirement (Litres)	Total Wastewater (KLD) (80% of domestic + 100% Total flushing)
	Hospital						
1	Bed (500)	500	315	104000	53500	157500	136700
	Attendant (For Patient)	500	30	10000	5000	15000	13000
	Pathology & Labs			10000		10000	8000
	Hospital Staff	500	30	10000	5000	15000	13000
	Admin Staff	50	30	1000	500	1500	1300
	Security & Miscellaneous Staff	25	30	500	250	750	650
2	Medical College	2500	35	50000	37500	87500	77500
3	Hostels						
	Girls Hostels	250	100	15000	10000	25000	22000
	Boys Hostels	250	100	15000	10000	25000	22000
	Intern's hostel male & female	120	100	7200	4800	12000	10560
	Nurses Hostel	207	100	12420	8280	20700	18216
	Resident Doctor Hostel	120	100	7200	4800	12000	10560
4	Residential Blocks						
	Staff Quarters (Type III, IV, V, VI)	670	100	40200	26800	67000	58960
	Patient Relative Centre	130	100	7800	5200	13000	11440
	Community Centre	175	45	4375	3500	7875	7000
	Student Recreation Centre	500	45	12500	10000	22500	20000
	Visitors @ 20% of total population	134	15	1340	670	2010	1742
6	Landscape area use 50372.04 Sqm. @ 3.9 Litres/Sqm.		3.9 liter/sqm of Landscape area			196,500.00	
	HVAC					7,500.00	
Total in KLD				308535	185800	698,335.00	432,628.00
Round Off				308.54	185.80	698.34	432.63
Note -Water Conservation would be apply which is 30% Reduction in total Water Requirement.							
	STP capacity				519		
	ETP capacity				12000		
	Recycling						
	Treated water generation				389.37		





	Flushing water demand				185.80		
	Landscape area use 110877 Sqm. @ 3.75 liters/Sqm.				196.50		
	HVAC				7.50		
	Total				389.80		

Energy Conservation Measures

S. No.	Net Energy saved (weighted Average Calculation)	
	Solar Based lighting will be done in the common areas, Signages, entry gates and boundary walls etc.	275.4 KVA
2.	LED Based lighting will be done in the dwelling units	80.64 KVA
3.	Usage of energy efficient Lift (V/VF non gear lifts)	54 KVA
	Total Energy saved	410.04 KVA
	Total Energy consumption	5508 KVA
	Total Energy saving	7.74 %

Environmental Management Cost – Construction Phase

Sr. No.	Component	Particulars	Capital Investment (Lakhs)	Recurring Expenditure per Annum (Lakhs)
1.	Air	Anti-Smog Gun	5.0	2.0
2.	Water	Mobile STP, etc.	5.0	2.5
3.	Solid and C&D Waste and its Management	Stack yard and its management	3.0	2.5
4.	Occupational Health & Safety	Health medical checkup of workers, PPEs for Workers. Emergency Preparedness, Fire hydrant systems, fire extinguishers, emergency control room, OHC and HAZOP study.	3	2.0
5.	Environment Monitoring & Management	Environment Monitoring as per monitoring plan 1. Green Curtain on under construction building 2. Wind breaking wall of 3-meter height	10.0	3.0
6.	Green Belt	Development and maintenance of green belt	5.0	3.0

Total (Rs.)	31.0	15.0

Environmental Management Cost – Operation Phase

Sr. No.	Component	Particulars	Capital Investment (Lakhs)	Recurring Expenditure per Annum (Lakhs)
1.	Air	Stack emission control	3.0	0.50
2.	Water	Sewage Treatment Plant (STP)	500.0	10.0
3.	Rain Water Harvesting	Installation of RWH System & Annual Cleaning of RWH tank	30.0	3.00
4.	Solid waste Area and its Management	Purchase of Containers for Storage of Waste	3.0	5.00
		Installation of OWC for Bio-degradable waste of 400 Kg/day & 500 Kg/day	35.0	0.0
5.	Environment Monitoring & Management	Environment Monitoring as per monitoring plan	0.00	3.0
6.	Green Belt	Development and maintenance of green belt	15.0	1.5
7.	Others	Energy saving devices, miscellaneous	55.0	2.5
Total (Rs.)			641.0	25.5

STATUTORY CLEARANCES:

1	Land docs	: As per record submitted by PAs the land has been allotted for this project by Joint Secretary, Deptt. of Health, Medical, Education and Family Welfare, Govt. of Jharkhand vide letter no. 6/P(nayi yojna)-12/2016/1084, dated 04.11.2016
2	DFO Forest Distance	: DFO, Bokaro Forest Division vide letter no. 2061, dated 25.09.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
3	DFO Wild Life	: DFO, Wildlife Division, Hazaribag vide letter no. 1272, dated 29.06.2021 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
4	CO certificate	: The CO, Chas (Bokaro) vide letter no. 1928, dated 20.09.2024 has

		mentioned the plot no. of the project is not recorded as "Jungle Jhar" in R.S. Khatyan & Register II.
5	AAI NOC	: Airport NOC not required because building height is less than 30m. As per COLOR CODED ZONING MAP (CCZM) issued by AAI for Bokaro Airport "PERMISSIBLE TOP ELEV.256M AMSL OR BELOW" up to 30 m height building in blue zone is permissible. [as per website https://nocas2.aai.aero/nocas/mappage.html]
6	Fire Department	: Fire application is applied on dated 17.03.2024.
7	Building Plan	: Conceptual Plan submitted.

Based on the presentation made and information provided, the Committee decided that the proposal for Proposed Medical College, Hospital, Hostel, Residences – (Director type 2, 3 & 4 BHK), Community Centre, Student Recreation by Jharkhand State Building Construction Corporation Limited (Govt. of Jharkhand Undertaking) at Sector 12 Pipratand, Thana no. : 36, Thana : Chas, Distt. : Bokaro, Jharkhand is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure –I alongwith the following specific conditions :

- I. Plot no. 345 shall not be considered as part of the project area and to be excluded from the project boundary.
- II. The Proposed oxygen plant shall be set up after obtaining all applicable clearances / permissions.
- III. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Mo Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).
- IV. Ground water to be drawn for use in the project only after obtaining permission from the Competent Authority.
- V. Environment management system including organization structure to be drawn to ensure compliance of EC conditions stipulated based on principles of Continual Improvement and periodical management review.
- VI. All raw material to be stored only under covered shed.
- VII. PAs to offset (upto20%) consumption of conventional energy sources by promoting use of solar energy, passive energy utilization, optimum fenestration, shading effect and heat islands.
- VIII. Developers to promote energy conservation measures such that it offsets not less than 02 % of connected load. It is to be achieved by solar panels etc meeting ECBC norms.

- IX. Trees should be developed & maintained not less than 15% of project area.
- X. Organic Waste Converter (OWC) to be installed of sufficient capacity such that all organic waste (bio degradable) generated is composted at source only.
- XI. Developers/Company to install STP of sufficient capacity such that all the sewer produced is treated and reused.
- XII. Developers/Company to install Rain water harvesting structures such that all the roof top water runoff is collected and harvested including reuse on 100% basis.
- XIII. Developers/Company to conduct and submit carbon footprint and carbon sequestration study report including mitigation measures as a part of EC compliance.
- XIV. Water runoff originating from open non constructed areas of project premises to be harvested /guided in such a way that it does not create water logging condition outside.
- XV. Sufficient number of EV fast charging points to be installed.
- XVI. MSW Collection centre should be located in isolated and preferably unmanned area. Movement of the vehicle carrying waste should be under tarpaulin covered condition only. Route of vehicle should be such that it avoids residential areas as far as practical.
- XVII. ISO 14k EMS system standard to be followed for implementation of EMPs with MRM in place for feedback to Sr management.
- XVIII. A cycling tract to be provided in residential complex so as to save on fuel and make in campus movement environment friendly.

17. Proposed Sanrh & Sonpura Sand Deposit Project on Bokaro River Bed of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Sanrh & Sonpura, Block : Barkagaon, Distt. : Hazariabagh, Jharkhand (4.58 Ha).

{Proposal No : SIA/JH/MIN/ 502050/2024}

Name of the consultant : Rian Enviro Private Limited, Patna, Bihar.

This is a new project which has been listed for appraisal on 23.10.2024. On the request of the project authority this was taken up for consideration on 24.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Stone Mining (47200 Cum Per Annum/ 77880 Ton Per Annum).

Project and Location Details:

Sl	Parameter	Details
1	Project Name	SANRH & SONPURA SAND DEPOSIT
2	Lessee:	M/s Jharkhand State Mineral Development Corporation Ltd. (A Govt. of Jharkhand Enterprises)
3	Lease Address	Khanij Nigam Bhawan, Doranda, Ranchi – 834002 (Jharkhand)
4	Lease Area	4.58 HA. Acres: 11.31 Acres
5	Type of Land	Non-Forest Government Waste Land (River Bed)
6	Project Cost	92.92 Lakhs
7	EMP Budget	Capital: 0.682 Lakhs Recurring: 4.8 Lakh / year
8	CSR / CER Budget	-
9	New or Expansion	New Project
10	Mineable Reserves	Cu.M.: 47200 cum per annum (Dry basis) Tonnes: 77880 TPA (Dry basis)
11	Mine Life	Lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.
12	Man power	130
13	Water Requirement	3.632 KLD= 1.3 KLD (Drinking & Domestic Uses) + 0.132 (Plantation) KLD + 2.2 KLD (Dust Suppression).
14	Water Source	Water will be sourced from local vendor and abandoned Mine through Water Tanker for Dust Suppression and Plantation and permission from gram panchayat will be taken to fulfill water requirement for mining operation after the grant of Environment clearance.
15	DG Set / power	--
16	Crusher	--
17	Nearest Water Body	Mining lease allocated on the inactive channel of the Bokaro River.
18	Nearest Habitation	Sanrh, Approx. 0.5 km towards East.
19	Nearest Railway Station	Bes Railway Station, Approx. 12.5 Km towards NE.
20	Nearest Air Port	Birsa Munda Airport, Ranchi, Approx. 58.0 km towards South.
21	Road & Highways	Barkagaon Road, Approx. 0.62 km. towards East.

CO-ORDINATES

1	Latitude	From 23° 49' 24.8753" N	To 23° 49' 31.8848" N
2	Longitude	From 85° 14' 10.6467" E	To 85° 14' 31.6161" E

LAND DETAILS

Village	Khata no.	Plot no.
Sanrh	58	2564
Sonpura	65	1 & 372

STATUTORY CLEARANCES

1	LOI / Lease docs	The Auction letter has been issued by Joint Secretary, Mines & Geology Deptt., Govt. of Jharkhand vide letter no. Kha.ni.-(Vivldh)-117/2017-2090/M, dated 30.09.2022. According to provisions in Jharkhand State sand Mining Policy and its amendment, JSMDCLtd. has been nominated as nodal agency for operating sand mines in category II.
2	CO	The CO, Barkagaon vide letter no. 422, dated 15.04.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jharl" in R.S. Khatiyar & Register II.
3	DMO	DMO, Hazaribag vide letter no. 1232/Khanan, dated 21.10.2024 certified that no other balughat exists within 500 m radius from proposed project site.
4	DFO Wild Life	DFO, Wildlife Division, Hazaribagh vide letter no. 752, dated 12.04.2023 certified that the proposed project site is outside Eco Sensitive Zone of Hazaribag Wildlife Sanctuary.
5	DFO Forest Distance	Division Forest Officer, Hazaribag West Division vide letter no. 2231, dated 25.04.2023 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	This project is mentioned in approved DSR of Hazaribag district (Page No. - 109. Sl. No. - 27)
7	Gram Sabha	BDO, Barkagaon vide letter no. 991, dated 12.06.2024 informed that Gram Sabha conducted on 06.05.2024 & 26.09.2024.
8	Mine Plan	Approved by District Mining Officer, Hazaribag vide Letter No.







	Approval	662/Mining, dated 18.05.2024.
9	Qualified Person	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Manual Method	
2	Quarry Area	:	4.58 ha.	Life of Mine – Lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.
3	Waste Generation	:	00 cum	
4	Stripping Ratio	:	1:0	
5	Working Days	:	200	
10	Topography of Mine	:	Area represents gently sloping land.	
11	Explosive Requirement	:	None. No blasting required	
12	Diesel/Fuel requirement	:	Not required for mining.	

Production Details

Year	Production of Sand (Cum)	Production of Sand (Tonne)
1 st	47200	77880

The development plan submitted along with the mining plan relates to mining operation during the first year.

Land Use

EXISTING LAND USE PATTERN	
Type of Land	Area in Hectares
Forest Land	0.00
Govt. waste land (River)	4.58
Residential area	0.00
Company land	0.00
Private Land	0.00

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Total	4.58

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	2.22 Ha	00
2	Along Approach Road	0.22 km	44

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- The Boundary Pillars of the proposed mine lease area will be maintained properly.
- One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- If any tree felling than necessary permission shall be taken from the competent authority.

- j. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- k. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
- l. Transportation from the river bed to the stockyard will be done using the existing road.
- m. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.
- n. Wet sand will not be transported.

Solid Waste Management

No solid waste is generated during the course of mining.

ENVIRONMENT MANAGEMENT COST

Sl. No	Description	Capital Cost (lakh)	Recurring Cost (lakh)
1	Pollution Control & Dust Suppression	Nil	2.5
2	Pollution Monitoring i) Air pollution ii) Water pollution iii) Soil Quality iv) Noise Pollution	—	1.0
3	Plantation and salary for one gardener (part time basis)	0.132	0.10
4	Haul road Maintenance Cost	0.55	1.20
TOTAL		0.682	4.8

Schedule of Monitoring

Sl. No.	Description of Parameters	Schedule of Monitoring
1	Air Quality	24 hourly samples twice a week in each season except monsoon
2	Water Quality (Surface & Groundwater)	Once a season for 4 seasons in a year
3	Soil Quality	Once in a year in project area
4	Noise Level	Twice a year for first two years & then once a year
5	Socio-economic Condition	Once in 3 years
6	Plantation Monitoring	Once in a season

GREEN BELT

Year	No. of Trees	Capital Cost (Lakh)	Recurring Cost (Lakhs)
1 st year	44	$44 \times 300 = 0.132$	0.10
2 nd year	Maintenance	-	0.10
3 rd year	Maintenance	-	0.10
4 th year	Maintenance	-	0.10
5 th year	Maintenance	-	0.10
Total	44	0.132	0.5

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Sewage from rest shelter would be treated in Septic Tank soak pit.
- There is no other source for generation or discharge of trade effluent.

Air Quality Management

Sand will be mined manually. No mining equipment would be needed. However, diesel operated tippers/tractors would be used for transportation of sand from mine to stockyard.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all transport vehicles would be repaired & maintained regularly.

Loading of Product on tippers – Water will be sprinkled on blasted Sand mass before they are loaded to trucks for transport.

Movement of tippers on Road – Movement of tippers on road generate dust. For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on Haul Road by using water tankers.
- ✓ Regular repair of Haul Road
- ✓ All Trucks carrying Sand outside lease area will have PUC certificate.
- ✓ Transport tippers/traders moving on public road will be covered with tarpaulin.

RISK ASSOCIATED WITH PROJECT ACTIVITIES AND THEIR MITIGATION MEASURES ARE DISCUSSED BELOW:

Road accidents

Transportation of sand along the public road may cause accident which may cause injury.

Preventive Measures;

- Ensure speed limit for the haulage vehicle for 40 KMPH.
- Regular maintenance of haulage road
- Appropriate navigational signs informing sensitive area like school and habitation
- Regular maintenance of the vehicles.

Dust generation

No drilling involved

- Dust mass would be supplied to workers.
- Regular sprinkling of water on road

Noise Generation

Source of noise pollution in the project would be movement of tippers / tractors transporting sand from mine to stock yard. In general tippers / tractors produce a noise level of 75 – 90 (A) measured at distance of 3m from the source.

Preventive measures

- Transportation activities would be confined during day time only.
- There would be a speed limit of 40 kmph for tippers. Higher is speed higher is noise
- Regular repair and maintenance of tippers/tractors.
- Plantation on both sides of haulage road.
- Tippers having PUC certified will be allowed to be used for sand transportation.

Health Hazards

During digging and handling of sand i.e. loading, transportation and unloading of sand, workmen would be exposed to inhalation of fine dust particles. This poses a health hazard.

Preventive Measures

Following mitigation measures would be taken to minimize this impact on health

- Regular water sprinkling on haulage roads
- Tree plantation on both sides of haulage road
- Tippers / Tractors carrying sand would be covered
- Mask would be provided to workmen employed for digging, loading, transportation and unloading activities

Accident at Site

This is a project with only source of accident at site would be movement of tippers /tractors within mine site for transportation of sand.

Preventive measures

Following mitigation measures would be taken to minimise risk of road accident-

- Separate alignment for movement of loaded vehicles coming out of mine site
- Ensure speed restriction of 10 KMPH within mine site for incoming and outgoing tippers
- Regular maintenance and repair of haulage vehicles employed for sand transportation
- No overtaking of transportation vehicles within mine site
- Proper maintenance of haulage roads

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Organizational Structure:

Introduction

The Environmental Management Plan (EMP) Cell has been established to ensure environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. This project aims to minimize environmental harm, promote sustainable practices, ensure compliance with regulations, and foster community engagement and transparency. The EMP Cell will provide a framework for identifying, assessing, and mitigating potential environmental impacts associated with the mining activities.

Environmental Policy

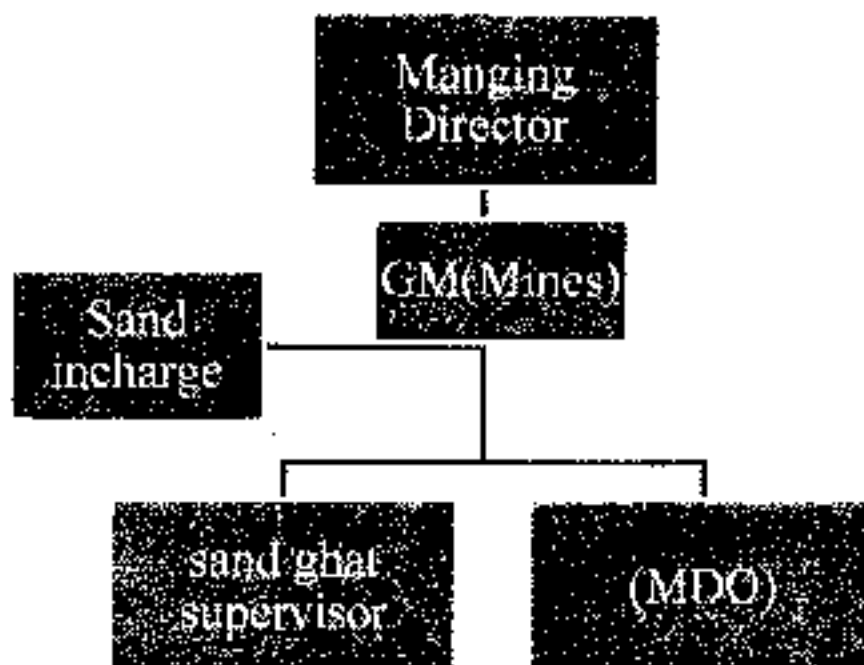
Our company is committed to:

- Minimizing environmental harm through responsible mining practices
- Promoting sustainable practices to conserve natural resources
- Ensuring compliance with regulatory requirements and industry standards
- Fostering community engagement and transparency through open communication

EMP Cell Objectives

The EMP Cell objectives are:

- Minimize environmental impacts on air, water, soil, and biodiversity
- Ensure compliance with regulatory requirements and industry standards
- Promote sustainable practices through efficient resource utilization
- Enhance community engagement and transparency through regular updates



Roles and Responsibilities: All following responsibility will be done by MDO

- Develop, implement, and review EMP
- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide environmental training
- Manage environmental data collection
- Develop environmental policies
- Conduct site inspections
- Identify and mitigate environmental hazards
- Prepare quarterly reports
- Conduct field monitoring
- Collect and record environmental data
- Assist in data analysis and reporting
- Maintain monitoring equipment
- Conduct site inspections
- Assist in preparing quarterly reports
- Update environmental records
- Assist in implementing mitigation measures
- Participate in training programs
- Provide support to EO

- Maintain environmental records
- Coordinate documentation
- Assist in preparing quarterly reports
- Manage environmental documentation
- Provide administrative support
- Coordinate training logistics
- Maintain communication with regulatory authorities
- Assist in updating policies
- Manage environmental budget
- Provide general administrative support

Director/Top Management Responsibilities

- Provide strategic direction
- Approve environmental policies
- Allocate resources
- Review quarterly reports
- Ensure compliance
- Foster environmental responsibility
- Support employee training
- Review environmental investments
- Ensure integration of environmental considerations

EMP Process Flow

The EMP process flow includes:

1. Environmental Monitoring
2. Data Analysis
3. Report Submission
4. Review and Revision
5. Implementation
6. Compliance Check

Key Decision Points

Key decision points include:

1. Non-compliance: Corrective action and Reporting
2. Environmental incidents: Investigation, Mitigation, and Reporting

Documentation

Documentation includes:

- EMP manual
- Monitoring records
- Reports
- Inspection records
- Training records

Implementation Timeline

The implementation timeline consists of:

1. Pre-Operational Phase (1 month): Establish EMP
2. Operational Phase (Ongoing): Implement EMP

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3. Closure and Rehabilitation Phase (6 months): Restore mined land

Reporting

The EMP Cell will submit quarterly reports to:

- Company Director
- Regulatory authorities

Conclusion

The EMP Cell is committed to ensuring environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. With a clear structure, roles, and responsibilities, the EMP Cell is equipped to manage environmental impacts and promote sustainable practices.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Proposed Sanrh & Sonpura Sand Deposit Project on Bokaro River Bed of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Sanrh & Sonpura, Block : Barkagaon, Distt. : Hazariabagh, Jharkhand (4.58 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nlc.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. The Environmental Clearance granted for lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.
- IV. Replenishment study shall be conducted during pre-monsoon and post monsoon every year and study report have to be submitted to SEIAA / SEAC, Jharkhand. The production shall be restricted to 60% of the replenished quantity or the proposed quantity in the mine plan, which ever is less.
- V. Suitable plant species of not less than 2 M height to be planted in area equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- VI. Dedicated water tanker to be provided for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

- VII. Pre-employment Occupational health checkup for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests. Summary findings of same to be submitted along with 6 monthly compliance.
- VIII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted within 6 monthly compliance report with Geo-Tagged photographs.
- IX. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted within 6 monthly compliance report.
- X. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.
- XI. Project Authority will ensure that personal protective equipments such as protective clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel's.
- XII. River Sand Mining shall not be done in rainy Season (mid June to mid October of each calendar year).
- XIII. Dept of Mines & Geology, Govt. of Jharkhand shall keep a strict vigil in the compliance of relevant provisions of applicable Jharkhand Minerals (Prevention of illegal mining, Transportation and Storage) Rule 2017 and its amendment especially scientific execution of mining plan (as approved by them themselves) and report violations if any is found as well as action taken for the same.
- XIV. Project Proponent shall submit (to the SEIAA, Jharkhand, Regional Office of MoEF&CC at Ranchi, Jharkhand State Pollution Control Board) six monthly compliance report with evidence of the conditions within a fortnight after the end of every six month till validity period of Environmental Clearance.
- XV. The project proponent before starting any activity / preparation of ground, on the leased area shall demarcate his lease hold by RCC pillars erected at the cost of lease holder after certification of the mining officer. On each pillar Geo-Coordinate and fore bearing / back bearing shall be written with permanent paint mark as described in the mining plan. All the pillars should remain intact at same geo-coordinate. Establishment / labeling of Benchmark at each pillars or ground control points.
- XVI. Extraction of sand beyond annual production capacity is not permitted.
- XVII. The Project Proponent should undertake the sand mining limited to 03 meter (three meter) depth by exclusively manual method.
- XVIII. The stacking area of mined-out sand which shall be situated near the mining site within a fenced area from all sides to avoid being spread in the nearby areas by high winds and the height of stacking should not exceed 2 meter. Transportation shall be confined to day time only that is from sunrise to sunset, to avoid inconvenience to local population in any manner.
- XIX. Mining activity shall not be done for mine lease where mining can cause danger to site of flood protection works, places of cultural, religious, historical and archaeological importance.
- XX. Project Proponent shall submit the annual replenishment report certified by an authorized agency.

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- XXI. No labour camp shall be allowed in riverbed.
- XXII. Provision shall be made for housing labour with all necessary infrastructure and facilities (outside mining Block and river-bed) such as fuel for cooking, toilets / mobile toilets, safe drinking water, First-Aid facilities, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
- XXIII. Labour & Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers shall be undertaken periodically to observe any adverse health impact due to exposure to dust and take corrective measures, if needed.
- XXIV. The Project Proponent shall make arrangements for safe drinking water, first aid facility along with anti-venom injection, in case of emergency for the workers.
- XXV. Sand and gravel may be extracted across the entire active channel during the dry season.
- XXVI. Abandoned stream channels on the terrace and inactive floodplains be preferred rather than active channels and their deltas and flood plains. The stream should not be diverted to form the inactive channel.
- XXVII. Layers of sand and gravel which could be removed from the river bed shall depend on the width of the river and replenishment rate of the river.
- XXVIII. Sand and gravel shall not be allowed to be extracted where erosion may occur, such as at the concave bank.
- XXIX. Sand and gravel shall not be extracted up to a distance of 1 kilo meter (1 km.) from major bridges and highways on both sides, of five times (5x) of the span (x) of a bridge / public civil structure (including water intake points) on up-stream side and ten times (10x) the span of such bridge on down-stream side, subjected to a minimum of 250 meters on the upstream side and 500 meters on the downstream side.
- XXX. Sand and gravel could be extracted from the downstream of the sand bar at river bends.
- XXXI. Mining depth should be restricted to 3 meters and distance from the band should be $1/4^{th}$ of river width and should not be less than 7.5 meters.
- XXXII. A buffer distance / unmined block of 50 meters after every block of 1000 meters over which mining is undertaken or at such distance as may be the directed / prescribed by the regulatory authority shall be maintained.
- XXXIII. River bed sand mining shall be restricted within the central $3/4^{th}$ width of the river/rivulet of 7.5 meters (inward) from river banks but up to 10% of the width of the river, as the case may be. Regulating authority while regulating the zone of river bed mining shall ensure that the objective to minimize the effects of riverbank erosion and consequential channel migration are achieved to the extent possible. In general, the area for removal of minerals shall not exceed 60% of the mine lease area, and any deviation of relaxation in this regard shall be adequately supported by the scientific report.

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18. Proposed Kandtari Sand Deposit Project on Bokaro River Bed of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Kandtari, Block : Barkagaon, Distt. : Hazariabagh, Jharkhand (0.71 Ha).

(Proposal No : SIA/JH/MIN/ 501731/2024)

Name of the consultant :Rian Enviro Private Limited, Patna, Bihar.

This is a new project which has been listed for appraisal on 23.10.2024. On the request of the project authority this was taken up for consideration on 24.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Stone Mining (13,650 Cum Per Annum/ 22,114 Ton Per Annum)

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: KANDTARI SAND DEPOSIT
2	Lessee:	: M/s Jharkhand State Mineral Development Corporation Ltd. (A Govt. of Jharkhand Enterprises)
3	Lease Address	: Khanij Nigam Bhawan, Doranda, Ranchi – 834002 (Jharkhand)
4	Lease Area	: 0.71 HA. Acres: 1.75 Acres
5	Type of Land	: Non-Forest Government Waste Land (River Bed)
6	Project Cost	: 24.32 Lakhs
7	EMP Budget	: Capital: 1.09 Lakhs Recurring: 4.9 Lakh / year
8	CSR / CER Budget	: -
9	New or Expansion	: New Project
10	Mineable Reserves	: Cu.M.: 8,520 cum per annum Tonnes: 14,058 TPA
11	Mine Life	: Lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.
12	Man power	: 32
13	Water Requirement	: 3.66 KLD=0.32 KLD (Drinking & Domestic Uses) + 0.34 (Plantation) KLD + 3 KLD (Dust Suppression).
14	Water Source	: Water will be sourced from local vendor and abandoned Mine through Water Tanker for Dust Suppression and Plantation and permission from gram panchayat will be taken to fulfill water requirement for mining operation after the grant of Environment clearance.
15	DG Set / power	: --

16	Crusher	:	—
17	Nearest Water Body	:	Mining lease allocated on the inactive channel of the Bokaro River.
18	Nearest Habitation	:	Chhawaniya, Approx. 0.49 km towards NW.
19	Nearest Railway Station	:	Bes Railway Station, Approx. 13.17 Km towards NE.
20	Nearest Air Port	:	Birsa Munda Airport, Ranchi, Approx. 58.96 km towards South.
21	Nearest Forest	:	Chatra Forest Range, Approx. 5.67 Km towards SW.
22	Road & Highways	:	Barkagaon Road, Approx. 1.38 km. towards North.

CO-ORDINATES

1	Latitude	From 23°50'21.1628" N	To 23°12'55.6297" N
2	Longitude	From 85°12'27.9294" E	To 85°13'01.4300" E

LAND DETAILS

Village	Khata no.	Plot no.
Kandiari	7B	1 & 1980

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Auction letter has been issued by Joint Secretary, Mines & Geology Deptt., Govt. of Jharkhand vide letter no. Kha.ni.-(Vividh) 117/2017-2090/M, dated 30.09.2022. According to provisions in Jharkhand State sand Mining Policy and its amendment. JSMDCLtd. has been nominated as nodal agency for operating sand mines in category II.
2	CO	:	The CO, Barkagaon vide letter no. 422, dated 15.04.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatyan & Register II.
3	DMO	:	DMO, Hazaribag vide letter no. 1231/Khanan, dated 21.10.2024 certified that no other balughat exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribagh vide letter no. 961, dated 25.05.2024 certified that the proposed project site is outside Eco






		Sensitive Zone of Hazaribag Wildlife Sanctuary.
5	DFO Forest Distance	Division Forest Officer, Hazaribag West Division vide memo no. 2529, dated 19.06.2024 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	This project is mentioned in approved DSR of Hazaribag district (Page No. – 109, Sl. No. – 26)
7	Gram Sabha	Gram Sabha conducted on 26.09.2024.
8	Mine Plan Approval	Approved by District Mining Officer, Hazaribag vide Letter No. 682/Mining, dated 30.05.2024.
9	Qualified Person	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

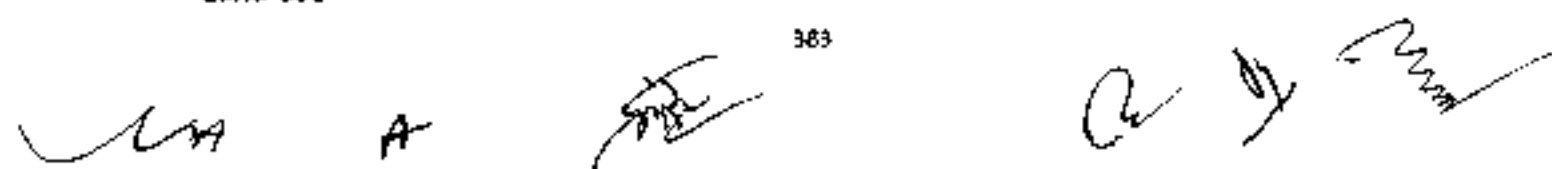
1	Mining Method	:	Opencast Manual Method	
2	Quarry Area	:	0.71 ha.	Life of Mine – Lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.
3	Waste Generation	:	00 cum	
4	Stripping Ratio	:	1:0	
5	Working Days	:	200	
10	Topography of Mine	:	Area represents gently sloping land.	
11	Explosive Requirement	:	None. No blasting required	
12	Diesel/Fuel requirement	:	Not required for mining.	

Production Details

Year	Production of Sand (Cum)	Production of Sand (Tonne)
1 st	8520	14058

The development plan submitted along with the mining plan relates to mining operation during the first year.

Land Use



EXISTING LAND USE PATTERN	
Type of Land	Area in Hectares
Forest Land	0.00
Govt. waste land (River)	0.71
Residential area	0.00
Company land	0.00
Private Land	0.00
Total	0.71

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.283 Ha	00
2	Along Approach Road	0.58 km	116

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Solid Waste Management

No solid waste is generated during the course of mining.

ENVIRONMENT MANAGEMENT COST

Sl. No	Description	Capital Cost (lakh)	Recurring Cost (lakh)
1	Pollution Control & Dust Suppression	Nil	2.5
2	Pollution Monitoring i) Air pollution ii) Water pollution iii) Soil Quality iv) Noise Pollution	--	1.0

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3	Plantation and salary for one gardener (part time basis).	0.34	0.20
4	Haul road Maintenance Cost	0.75	1.20
TOTAL		1.09	4.9

Schedule of Monitoring

S.No.	Description of Parameters	Schedule of Monitoring
1	Air Quality	24 hourly samples twice a week in each season except monsoon
2	Water Quality (Surface & Groundwater)	Once a season for 4 seasons in a year
3	Soil Quality	Once in a year in project area
4	Noise Level	Twice a year for first two years & then once a year
5	Socio-economic Condition	Once in 3 years
6	Plantation Monitoring	Once in a season

GREEN BELT

Year	No. of Trees	Capital Cost (Lakh)	Recurring Cost (Lakhs)
1 st year	116	$116 \times 300 = 0.34$	0.20
2 nd year	Maintenance	-	0.20
3 rd year	Maintenance	-	0.20
4 th year	Maintenance	-	0.20
5 th year	Maintenance	-	0.20
Total	116	0.34	1.0

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- The Boundary Pillars of the proposed mine lease area will be maintained properly.
- One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.

- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- k. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
- l. Transportation from the river bed to the stockyard will be done using the existing road.
- m. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.
- n. Wet sand will not be transported.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Sewage from rest shelter would be treated in Septic Tank soak pit.
- There is no other source for generation or discharge of trade effluent.

Air Quality Management

Sand will be mined manually. No mining equipment would be needed. However, diesel operated tippers/tractors would be used for transportation of sand from mine to stockyard.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all transport vehicles would be repaired & maintained regularly.

Loading of Product on tippers – Water will be sprinkled on blasted Sand mass before they are loaded to trucks for transport.

Movement of tippers on Road – Movement of tippers on road generate dust. For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on Haul Road by using water tankers.
- ✓ Regular repair of Haul Road
- ✓ All Trucks carrying Sand outside lease area will have PUC certificate.
- ✓ Transport tippers/traders moving on public road will be covered with tarpaulin.

RISK ASSOCIATED WITH PROJECT ACTIVITIES AND THEIR MITIGATION MEASURES ARE DISCUSSED BELOW:

Road accidents

Transportation of sand along the public road may cause accident which may cause injury.

Preventive Measures;

- Ensure speed limit for the haulage vehicle for 40 KMPH.

- Regular maintenance of haulage road
- Appropriate navigational signs informing sensitive area like school and habitation
- Regular maintenance of the vehicles.

Dust generation

No drilling involved

- Dust mass would be supplied to workers.
- Regular sprinkling of water on road

Noise Generation

Source of noise pollution in the project would be movement of tippers / tractors transporting sand from mine to stock yard. In general tippers / tractors produce a noise level of 75 – 90 (A) measured at distance of 3m from the source

Preventive measures

- Transportation activities would be confined during day time only.
- There would be a speed limit of 40 kmph for tippers. Higher is speed higher is noise.
- Regular repair and maintenance of tippers/tractors.
- Plantation on both sides of haulage road.
- Tippers having PUC certified will be allowed to be used for sand transportation.

Health Hazards

During digging and handling of sand i.e. loading, transportation and unloading of sand, workmen would be exposed to inhalation of fine dust particles. This poses a health hazard.

Preventive Measures

Following mitigation measures would be taken to minimize this impact on health

- Regular water sprinkling on haulage roads
- Tree plantation on both sides of haulage road
- Tippers / Tractors carrying sand would be covered
- Mask would be provided to workmen employed for digging, loading, transportation and unloading activities

Accident at Site

This is a project with only source of accident at site would be movement of tippers /tractors within mine site for transportation of sand.

Preventive measures

Following mitigation measures would be taken to minimise risk of road accident-

- Separate alignment for movement of loaded vehicles coming out of mine site
- Ensure speed restriction of 10 KMPH within mine site for incoming and outgoing tippers
- Regular maintenance and repair of haulage vehicles employed for sand transportation
- No overtaking of transportation vehicles within mine site

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- Proper maintenance of haulage roads

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Organizational Structure:

Introduction

The Environmental Management Plan (EMP) Cell has been established to ensure environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. This project aims to minimize environmental harm, promote sustainable practices, ensure compliance with regulations, and foster community engagement and transparency. The EMP Cell will provide a framework for identifying, assessing, and mitigating potential environmental impacts associated with the mining activities.

Environmental Policy

Our company is committed to:

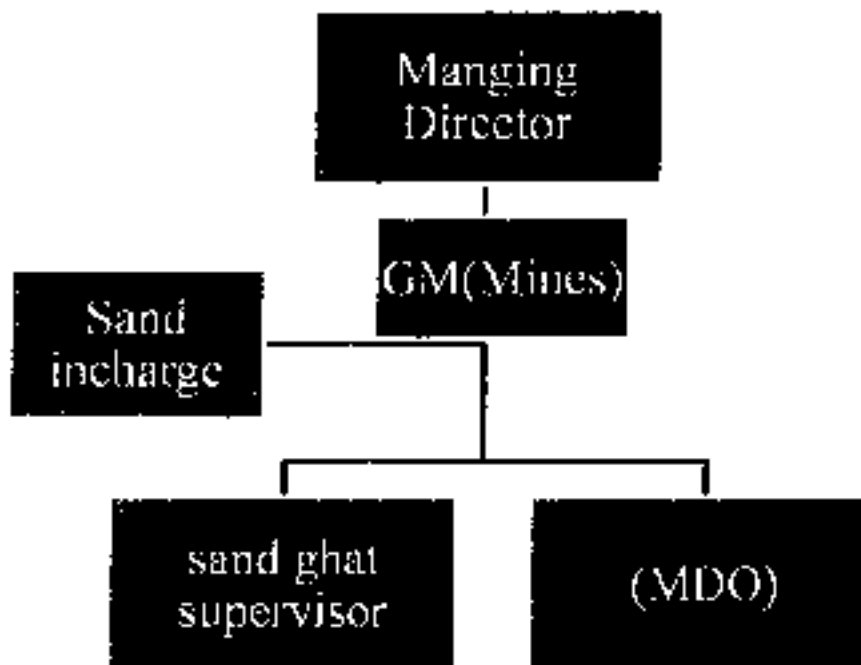
- Minimizing environmental harm through responsible mining practices
- Promoting sustainable practices to conserve natural resources
- Ensuring compliance with regulatory requirements and industry standards
- Fostering community engagement and transparency through open communication

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EMP Cell Objectives

The EMP Cell objectives are:

- Minimize environmental impacts on air, water, soil, and biodiversity
- Ensure compliance with regulatory requirements and industry standards
- Promote sustainable practices through efficient resource utilization
- Enhance community engagement and transparency through regular updates



Roles and Responsibilities: All following responsibility will be done by MDO

- Develop, implement, and review EMP
- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide environmental training
- Manage environmental data collection
- Develop environmental policies
- Conduct site inspections
- Identify and mitigate environmental hazards
- Prepare quarterly reports
- Conduct field monitoring
- Collect and record environmental data
- Assist in data analysis and reporting
- Maintain monitoring equipment
- Conduct site inspections
- Assist in preparing quarterly reports
- Update environmental records
- Assist in implementing mitigation measures
- Participate in training programs

- Provide support to EO
- Maintain environmental records
- Coordinate documentation
- Assist in preparing quarterly reports
- Manage environmental documentation
- Provide administrative support
- Coordinate training logistics
- Maintain communication with regulatory authorities
- Assist in updating policies
- Manage environmental budget
- Provide general administrative support

Director/Top Management Responsibilities

- Provide strategic direction
- Approve environmental policies
- Allocate resources
- Review quarterly reports
- Ensure compliance
- Foster environmental responsibility
- Support employee training
- Review environmental investments
- Ensure integration of environmental considerations

EMP Process Flow

The EMP process flow includes:

1. Environmental Monitoring
2. Data Analysis
3. Report Submission
4. Review and Revision
5. Implementation
6. Compliance Check

Key Decision Points

Key decision points include:

1. Non-compliance: Corrective action and Reporting
2. Environmental incidents: Investigation, Mitigation, and Reporting

Documentation

Documentation includes:

- EMP manual
- Monitoring records
- Reports
- Inspection records
- Training records

Implementation Timeline

The implementation timeline consists of:

1. Pre-Operational Phase (1 month): Establish EMP

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2. Operational Phase (Ongoing): Implement EMP

3. Closure and Rehabilitation Phase (6 months): Restore mined land

Reporting

The EMP Cell will submit quarterly reports to:

- Company Director
- Regulatory authorities

Conclusion

The EMP Cell is committed to ensuring environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. With a clear structure, roles, and responsibilities, the EMP Cell is equipped to manage environmental impacts and promote sustainable practices.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Proposed Kandtari Sand Deposit Project on Bokaro River Bed of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Kandtari, Block : Barkagaon, Distt. : Hazaribagh, Jharkhand (0.71 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. The Environmental Clearance granted for lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.
- IV. Replenishment study shall be conducted during pre-monsoon and post monsoon every year and study report have to be submitted to SEIAA / SEAC, Jharkhand. The production shall be restricted to 60% of the replenished quantity or the proposed quantity in the mine plan, which ever is less.
- V. Suitable plant species of not less than 2 M height to be planted in area equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- VI. Dedicated water tanker to be provided for spraying water on haul road and for irrigating newly planted saplings only Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

- VII. Pre-employment Occupational health checkup for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests. Summary findings of same to be submitted along with 6 monthly compliance.
- VIII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted within 6 monthly compliance report with Geo-Tagged photographs.
- IX. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted within 6 monthly compliance report.
- X. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.
- XI. Project Authority will ensure that personal protective equipments such as protective clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel's.
- XII. River Sand Mining shall not be done in rainy Season (mid June to mid October of each calendar year).
- XIII. Dept. of Mines & Geology, Govt. of Jharkhand shall keep a strict vigil in the compliance of relevant provisions of applicable Jharkhand Minerals (Prevention of illegal mining, Transportation and Storage) Rule 2017 and its amendment especially scientific execution of mining plan (as approved by them themselves) and report violations if any is found as well as action taken for the same.
- XIV. Project Proponent shall submit (to the SEIAA, Jharkhand, Regional Office of MoEF&CC at Ranchi, Jharkhand State Pollution Control Board) six monthly compliance report with evidence of the conditions within a fortnight after the end of every six month till validity period of Environmental Clearance.
- XV. The project proponent before starting any activity / preparation of ground, on the leased area shall demarcate his lease hold by RCC pillars erected at the cost of lease holder after certification of the mining officer. On each pillar Geo-Coordinate and fore bearing / back bearing shall be written with permanent paint mark as described in the mining plan. All the pillars should remain intact at same geo-coordinate. Establishment / labeling of Benchmark at each pillars or ground control points.
- XVI. Extraction of sand beyond annual production capacity is not permitted.
- XVII. The Project Proponent should undertake the sand mining limited to 03 meter (three meter) depth by exclusively manual method.
- XVIII. The stacking area of mined-out sand which shall be situated near the mining site within a fenced area from all sides to avoid being spread in the nearby areas by high winds and the height of stacking should not exceed 2 meter. Transportation shall be confined to day time only that is from sunrise to sunset, to avoid inconvenience to local population in any manner.
- XIX. Mining activity shall not be done for mine lease where mining can cause danger to site of flood protection works, places of cultural, religious, historical and archaeological importance.
- XX. Project Proponent shall submit the annual replenishment report certified by an authorized agency.

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- XXI. No labour camp shall be allowed in riverbed.
- XXII. Provision shall be made for housing labour with all necessary infrastructure and facilities (outside mining Block and river-bed) such as fuel for cooking, toilets / mobile toilets, safe drinking water, First-Aid facilities, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
- XXIII. Labour & Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers shall be undertaken periodically to observe any adverse health impact due to exposure to dust and take corrective measures, if needed.
- XXIV. The Project Proponent shall make arrangements for safe drinking water, first aid facility along with anti-venom injection, in case of emergency for the workers.
- XXV. Sand and gravel may be extracted across the entire active channel during the dry season
- XXVI. Abandoned stream channels on the terrace and inactive floodplains be preferred rather than active channels and their deltas and flood plains. The stream should not be diverted to form the inactive channel.
- XXVII. Layers of sand and gravel which could be removed from the river bed shall depend on the width of the river and replenishment rate of the river
- XXVIII. Sand and gravel shall not be allowed to be extracted where erosion may occur, such as at the concave bank.
- XXIX. Sand and gravel shall not be extracted up to a distance of 1 kilo meter (1 km.) from major bridges and highways on both sides, of five times (5x) of the span (x) of a bridge / public civil structure (including water intake points) on up-stream side and ten times (10x) the span of such bridge on down-stream side, subjected to a minimum of 250 meters on the upstream side and 500 meters on the downstream side.
- XXX. Sand and gravel could be extracted from the downstream of the sand bar at river bends.
- XXXI. Mining depth should be restricted to 3 meters and distance from the bank should be $1/4^{th}$ of river width and should not be less than 7.5 meters.
- XXXII. A buffer distance / unmined block of 50 meters after every block of 1000 meters over which mining is undertaken or at such distance as may be directed / prescribed by the regulatory authority shall be maintained.
- XXXIII. River bed sand mining shall be restricted within the central $3/4^{th}$ width of the river/rivulet of 7.5 meters (inward) from river banks but up to 10% of the width of the river, as the case may be. Regulating authority while regulating the zone of river bed mining shall ensure that the objective to minimize the effects of riverbank erosion and consequential channel migration are achieved to the extent possible. In general, the area for removal of minerals shall not exceed 60% of the mine lease area, and any deviation of relaxation in this regard shall be adequately supported by the scientific report.

19. Golpur Stone Deposit of M/s Majestic Stone Works, Village : Golpur, Thana no. : 85, Anchal : Pakuria, Distt. : Pakur, Jharkhand (2.477 Ha).

(Proposal No : STA/JH/MIN/ 498464/2024)

Name of the consultant : Rian Enviro Pvt. Ltd., Patna, Bihar.

This is a new project which has been taken for appraisal on 23.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Terms of Reference (ToR) as per EIA notification, 2006.

ToR Application for: Boulder Stone: 39373 Cum Per Annum /118121 Tonnes Per Annum

PROJECT and LOCATION Details:

Sl.	Parameter	Details
1	Project Name	: Golpur Stone Deposit
2	Lessee:	: Partner- Shri Vikash Kumar & Shri Prashant Shekhar
3	Lease Address	: Mauza- Golpur, Thana No.-85, Anchal- Pakuria, District- Pakur, Jharkhand
4	Lease Area	: Ha: 2.477 ha Acres: 6.12 Acres
5	Type of Land	: Non Forest – Rayati Land
6	Project Cost	: 50.0 Lakhs
7	EMP Budget	: Capital: 8.68 Lakhs Recurring: 2.5 Lakh / year
8	CSR / CER Budget	: Rs. 1,00,000
9	New or Expansion	: New Project
10	Mineable Reserves	: Cu.M.: 196823 Cu. M. Tonnes: 590471Tonnes
11	Mine Life	: 10 years
12	Man power	: 36
13	Water Requirement	: 14.08 KLD=1.08 KLD (Drinking & Domestic Uses) + 9.5 (Plantation) KLD + 3.5 KLD (Dust Suppression).
14	Water Source	: From Nearby villages by tankers
15	DG Set / power	: 60 KVA
16	Crusher	: Not Present
17	Nearest Water Body	: Brahmani River, Approx. 1.94 Km
18	Nearest Habitation	: Golpur, Appox. 0.33 KM
19	Nearest Rail Station	: Pinargaria Railway Station, 6.5 KM
20	Nearest Air Port	: Netaji Subhash Chandra Bose International Airport: 197.0 KM
21	Nearest Forest	: NIL
22	Road & Highways	: NH 114A (Dumka- Rampurhat Marg) – 6.76 KM

CO-ORDINATES

1	Latitude	From 24°16'16.289" N To 24°16'22.953" N

2	Longitude	From 87°38'27.736" E	To 87°38'35.271" E

LAND DETAILS

Khata no.	Plot no.
12	543 (P)
18	545
04	546 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been Issued by District Mining Officer, Pakur vide memo no. 1567/M, dated 23.09.2024.
2	CO	:	The CO, Pakuria (Pakur) vide letter no. 477/Ra., dated 18.07.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatyan & Register II.
3	DMO	:	DMO, Pakur vide memo no. 1596/M, dated 25.09.2024 certified that 05 other mining lease area (4.69 Acre, 35.66 Acre, 19.00 Acre, 12.94 Acre & 18.23 Acre) exists within 500 meters radius from proposed project site and total area is 96.64 Acre or 39.11 Ha.
4	DFO Wild Life	:	DFO -cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1254, dated 26.06.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide memo no. 886, dated 25.06.2024 certified that the distance of forest is 364 meters from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 1597/M, dated 25.09.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 115, Page no. 139).
7	Gram Sabha	:	Gram Sabha conducted on 06.07.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 1603/M, dated 25.09.2024.
9	Qualified Person	:	Shri P.K. Sen was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Method, Mechanized Mine, Wagon Drilling & Control Blasting will be deploy	
2	Quarry Area	:	5 years ~ 2.477 Ha.	Life of Mine – 2.477 Ha.
3	Waste Generation	:	5 years~24350 cum Gritty Soil & 10361 cum Intercalated Waste	Life of Mine – 24350 cum Gritty Soil & 10361 cum Intercalated Waste.
4	Stripping Ratio	:	1:20	
5	Working Days	:	300	
6	Benchess: size & No	:	6m x 6m	
7	Elevation of Mine	:	114-102 m AMSL	
8	Ground Level Elevation	:	102m AMSL	
9	Ultimate Working Depth	:	66 m AMSL	
10	Water Table	:	58-53 m AMSL	
11	Topography of Mine	:	Flat	
12	Explosive Requirement	:	63 Kg/Day	
13	Diesel/Fuel requirement	:	592 Litres/day	

Production Details

Year	Production of stone (Cum)	Production of stone (Tonne)	Gritty Soil(cum)	Intercalated Waste(cum)	Bench RL in Meters
1 st	39351	118051	13425	2071	114-102
2 nd	39363	118089	2415	2072	114-102
3 rd	39373	118121	00	2073	108-96
4 th	39363	118089	1380	2072	102-90
5 th	39373	118121	7130	2073	108-96
Total	196823	590471	24350	10361	

Land Use

Type of Land	Present Land Use (in Ha)	At the End of Plan Period (in Ha)	At the end of Mine (in Ha)	Conceptual Period (In Ha)			
				Backfill	Stone pitching wall	Water Body	Plantation

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Quarry	Nil	1.7250 (Including backfill 0.400 & stone pitching wall 0.001 Ha)	1.7250 (Including backfill 0.552 & stone pitching wall 0.001 Ha)	0.400	0.001	0.626	0.693 (Dead bench plantation)
Greenbelt within Safety Barrier	Nil	0.757	0.757	---		---	0.757
Road	0.050	Nil	Nil	---		---	---
Total Area in use	0.050	2.477	2.477	0.400	0.001	0.626	1.450
Balanced Area unused	2.427	Nil	Nil	---		---	---
Total Applied Area	2.477	2.477	2.477	2.477			

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	LOCATION	Area/Length	No of Trees
1	Safety Zone	0.757 ha	1893 trees @ 2500 trees per ha
2	Other Reclaimed Area	NIL	NIL
3	Haul /Approach Road	NIL	NIL

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Solid Waste Management

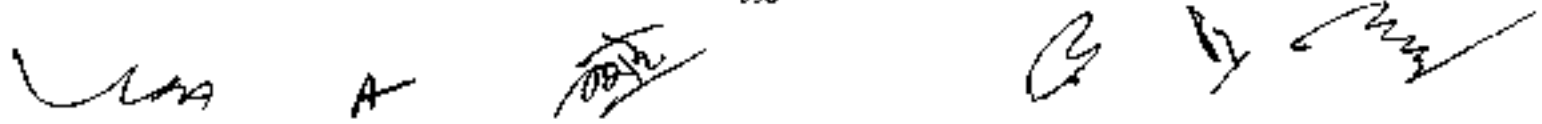
- Waste Generation will be 24350 cum Gritty Soil & 10361 cum Intercalated Waste during the life of mine. The area is covered with a layer of gritty soil. During quarry development in 1st & 2nd year gritty soil and intercalated waste will be removed and this soil & waste will be temporarily dumped (Area-0.258 Ha, (L x W x H= 66m x 39m x 6m) & Area- 0.074 Ha, (L x W x H= 46m x 16m x 6m)], at the north-east part of the area with suitable precautions like parapet wall, garland drain & in 3rd year Intercalated waste will be removed and this will be backfill within the exhausted quarry & in 4th year removed gritty soil & intercalated waste will be backfill within the exhausted quarry & in 5th year removed gritty soil & intercalated waste & total temporarily dumped material will be backfill within the exhausted quarry. In conceptual period total removal intercalated waste will backfill within the exhausted quarry.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be used for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha' road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask etc. shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.



Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Quantity of HSD/ Fuel consumption per day of Golpur Stone Deposit

S. No	Machine	Details of fuel (Diesel) requirements	Consumption of Diesel (In liters/day.)
1	Wagon Drill	Number of Machine=1 Diesel consumption in one shift working. (i.e- 10 liters) $=1 \times 8 \times 10 = 80 \text{ liters}$	80 liters
2	Excavator	Number of Machine=2 Diesel consumption in one shift working.(i.e- 07litre/hr) $=2 \times 8 \times 7 = 112 \text{ liters}$	112liters
3	Tippers	Number of Tippers=03	120 liters

4		Diesel consumption in one shift working. (i.e- 4ltr/hr.) $=03 \times 10 \times 4 = 120$	160 liters
	DG Set	Number of DG Set =1(60 KVA) Diesel consumption by one in one shift working. (i.e- 16 liter/hr.) $=1 \times 10 \times 16 = 220$ liters	
5	Water Sprinkler	Number of Sprinkler=01 Diesel consumption by Sprinkler in one shift working (i.e-2ltr/hr.) $=1 \times 10 \times 2 = 20$ liters.	20 liters
6	Extra	Transport vehicle, super vision vehicle, maintenance vehicle	100 liters
Total			592

Environment Management Plan:

S.NO	Mitigative measures to protect Environment	Capital Cost (In Lakh)	Recurring cost (In Lakh)
1	Water Sprinkling/Air pollution control (Dust Suppression along haulage road & mine	3.0	1.0
2	Green belt development safety zone 7.5mtr (for each plants including hedges and fences) @ No. of plants 1893x 300Rs.	5.68	1.0
3	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	Nil	0.50
	Total	8.68	2.5

Organizational Structure:

Introduction

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Environmental Policy

Our company is committed to:

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- Minimizing environmental harm through responsible mining practices
- Promoting sustainable practices to conserve natural resources
- Ensuring compliance with regulatory requirements and industry standards
- Fostering community engagement and transparency through open communication

EMP Cell Objectives

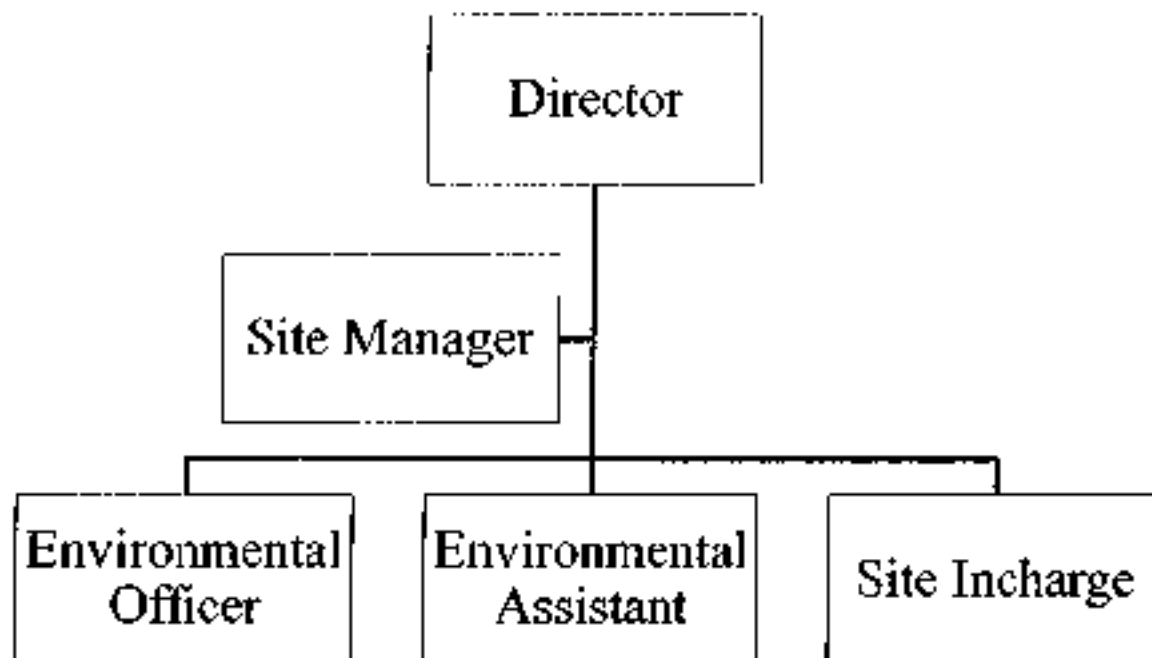
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- Ensure compliance with regulatory requirements and industry standards
- Promote sustainable practices through efficient resource utilization
- Enhance community engagement and transparency through regular updates

EMP Cell Structure

The EMP Cell consists of three members:

- Environmental Officer (EO) as Team Lead, responsible for overall strategy
- Environmental Assistant (EA) for Monitoring and Reporting, focusing on data collection
- Administrative Assistant (AA) for Documentation and Coordination, handling administrative tasks



EMP Cell structure

Roles and Responsibilities

Environmental Officer (EO)

- Develop, implement, and review EMP
- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide environmental training
- Manage environmental data collection
- Develop environmental policies

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- Conduct site inspections
- Identify and mitigate environmental hazards
- Prepare quarterly reports

Environmental Assistant (EA)

- Conduct field monitoring
- Collect and record environmental data
- Assist in data analysis and reporting
- Maintain monitoring equipment
- Conduct site inspections
- Assist in preparing quarterly reports
- Update environmental records
- Assist in implementing mitigation measures
- Participate in training programs
- Provide support to EO

Administrative Assistant (AA)

- Maintain environmental records
- Coordinate documentation
- Assist in preparing quarterly reports
- Manage environmental documentation
- Provide administrative support
- Coordinate training logistics
- Maintain communication with regulatory authorities
- Assist in updating policies
- Manage environmental budget
- Provide general administrative support

Director/Top Management Responsibilities

- Provide strategic direction
- Approve environmental policies
- Allocate resources
- Review quarterly reports
- Ensure compliance
- Foster environmental responsibility
- Support employee training
- Review environmental investments
- Ensure integration of environmental considerations

EMP Process Flow

The EMP process flow includes:

1. Environmental Monitoring
2. Data Analysis
3. Report Submission
4. Review and Revision
5. Implementation
6. Compliance Check

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Key Decision Points

Key decision points include:

1. Non-compliance: Corrective action and Reporting
2. Environmental incidents: Investigation, Mitigation, and Reporting

Documentation

Documentation includes:

- EMP manual
- Monitoring records
- Reports
- Inspection records
- Training records

Implementation Timeline

The implementation timeline consists of:

1. Pre-Operational Phase (1 month): Establish EMP
2. Operational Phase (Ongoing): Implement EMP
3. Closure and Rehabilitation Phase (6 months): Restore mined land

Reporting

The EMP Cell will submit quarterly reports to:

- Company Director
- Regulatory authorities

Conclusion

The EMP Cell is committed to ensuring environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. With a clear structure, roles, and responsibilities, the EMP Cell is equipped to manage environmental impacts and promote sustainable practices.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S.No.	Rating	Scale
1	High Risk	1-4








2	Medium Risk	5-12
3	Low Risk	13-25

Hazard Identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily Injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- I. Falls from the edge of a bench
- II. Dust generation during drilling
- III. Noise Generation due to drilling
- IV. Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation

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- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

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Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)

- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 22, 23, 24, 25 & 26.10.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 22.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith following specific condition :-

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Noor" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).
- II. The detailed EMP is to be prepared for the Habitation existing within an area of 500 meter radius of proposed project boundary. This EMP is to be included in EIA report.

20. Proposed Green Field Project to Set-up wet 2.48 MTPA Coal Washery by M/s Omkar Coal Washeries Pvt. Ltd., Village : Ohepat, Tehsil : Balumath, Distt.: Latehar, Jharkhand (7.48 Ha).

(Proposal no.: SIA/JH/CMIN/500925/2024)

Name of the Consultant : Pollution and Ecology Control Services, Nagpur (M.S.)

This is a new project which has been taken for appraisal on 23.10.2024.

Project Sector: 2(a) Coal Washeries, Category: B1.

Application for Terms of Reference (ToR) as per EIA notification, 2006.

ToR application for : Coal Washery with throughput ROM Coal Feed of 2.48 MTPA

The proposal was considered by the committee to determine the " Terms of Reference (ToR) " for undertaking detailed EIA study for the purpose of obtaining Environmental Clearance in accordance with the provisions of the EIA Notification, 2006 and amendments thereafter. For this purpose the Project Proponent has submitted the prescribed Form - I & PFR the proposed project falls under item 2(a) Coal Washeries as per EIA Notification, 2006.

Indian coal is characterized having high ash content and low heat value in nature compared to coals of US or Australian origin. More than 90 percent of coal mined in India is produced from opencast mines contributing to inert contamination. Run of mine (ROM) coal extracted from opencast mines in India typically has ash contents in the range of 35 percent to as high as 50%, low and reducing calorific value (2500- 4500 kcal/kg). Presence of high ash content is reported to lead to faster wear and tear of power plant components, difficulty in pulverisation, poor emissivity and flame temperature, low radioactive transfer, generation of excessive amounts of fly-ash containing large amounts of un-burnt carbon, etc. Further, transportation of high-ash coal across long distances leads to increased cost because large quantities of noncombustible inert materials are also transported. It also leads to increased freight service demand causing excess pressure on the rail transportation. Transportation of inert materials also lead to additional consumption of energy due to rail and road transportation contributing to emission of carbon-dioxide (CO₂) and other greenhouse gases (GHG) from the mode of transport (rail and road).

Coal washing lead to higher quality fuel with better heat value (could increase thermal efficiencies by as much as 4%-5% on existing pulverized coal- fired boilers with an accompanying reduction of CO₂ emissions), reduces fuel quantity requirements (handled and transported) and cost of transportation.

Project and Location Details :

Sr. No.	Parameter	Details
1	Project Name	Omkar Coal Washeries Pvt Ltd
2	Project Proponent	Mr. Sandeep Agarwal
3	Address	At Khata No. 25, RS No. 194, 195, 198, 284 Village Ohepat, District Latehar, Jharkhand.
4	Area	7.48 ha

5	Type of Land	Agricultural Barren land, will be converted for Industrial use
6	Project Cost	Rs. 29.27 Cr
7	New or Expansion	New
8	Raw Coal Linkage	Tetaria Project – Mine, Magadh Coal Mines, Amrapali Coal Mines, Ashoka Coal Mines and other.
9	Product Linkage	Power Plant, Steel Plant & Other Industries
10	Project Life	21 Years including Construction period being 3 years
11	Manpower	75
12	Water Requirement	333 KLD
13	Water Source	Ground Water and Rainwater Harvesting
14	DG Set / Power	2 X 380 KVA (For office use only during power failure)
15	Crusher	Yes (Within Washery Building)
16	Nearest Water Body	Patam River : 0.56 Km (NNW)
17	Nearest Habitation	Olhepat : 0.04 Km (E)
18	Nearest Railway Station	Tori Railway Station : 17 Km (S) Kusmahi Railway Siding : 11 Km
19	Nearest Airport	Birsa Munda Airport, Ranchi : 85 Km (SE)
20	Nearest Forest	Dirdidag P F : 0.27 Km (SW)
21	Road & Highways	SH 10 : 3.10 Km (NE) NH 99 : 5.70 Km (E)

CO-ORDINATES:

1	Latitude	From 23°49'59.20"N	To 23°50'3.42"N
2	Longitude	From 84°43'53.65"E	To 84°43'56.65"E

LAND DETAILS:

Sr. No.	Khata No	RS No	Area in ha
1	25	198	3.64
2	25	194,195	2.02
			0.15
3	25	284	1.66
Total			7.48

Process Details :

The washery has been designed for a throughput capacity of 2.48 MTPA raw coal. The washery will produce two products viz. Washed Coal & Reject Coal.

It has been planned to crush entire coal down to (-) 13 mm. Treatment of 13-0.5 mm coal into two stage HM cyclone and beneficiation of -0.5 mm size fraction by froth floatation have been envisaged.

The proposed balance of products is given below :

Sr. No.	Properties	Raw Coal	Washed Coal	Rejects
1	Quantity (MTPA)	2.48	2.0	0.48
2	Ash %	40-44	28-32	65-70
3	Total Moisture %	7.5	12.0	10.0
4	Sulphur %	0.5	0.5	0.5
5	GCV (Kcal/Kg)	3600 - 3800	4800-5000	1000-1200
6	Volatile Matter (%)	25	25	32
7	Fixed Carbon (%)	28-30	35-43	7-8
8	Mercury as (Hg) mm/kg	<0.10	<0.10	<0.10
9	Yield %	100	80.0	20.0

PROPOSED COAL WASHERY (OPERATION)

Run-Of-Mine Coal transported by Tipping Trucks shall be received at the Coal Washery site and dumped in the areas adjacent to the Ground Hopper from where the same shall be fed to the Ground Hopper by dozing / Pay loaders. Raw coal in the size up to 300 mm transported from mines will be feed the ground hopper.

Ground hopper is fitted with grizzly of 300 X 300 mm size opening. Coal will be transported by pay loaders to feed over the grizzly. Ground hopper will be fitted below with two vibro-feeders (400 TPH each) which in turn feed to a conveyor (500 TPH). Coal is transported through conveyor to two rotary breakers (250 TPH each) located parallelly. Rotary breaker in turn will separate out coal and shale / rock. It will crush coal to (-) 50 mm size and pass through the perforated outer shell. Coal and shale will be transported by separate conveyors. Shale will be crushed to desired size by double roll crusher (50 TPH). Coal conveyor feed coal to a double deck vibratory screen (500 TPH) to separate out (-) 25 mm and (-) 15 mm coal fines from the crushed coal and over flow of screen will be (-) 50 mm. Thus it will produce three products (+) 25 mm to (-) 50 mm coal and (+) 15 mm to (-) 25 mm and (-) 15 mm coal fines. Coal fines will be screened again through Flip flow screen which will produced two product (-) 15 mm to (+) 6mm and

(-) 6 mm coal fines which will be transported through different conveyors. Sized coal

(-) 15 mm to (+) 6mm size, (+) 15mm to (-) 25 mm will be mixed with (+) 25 mm to

(-) 50 mm coal and stocked in a stack holder.

Below the Stack holder 2 Nos. of vibrators (200 TPH each) will be provided to deliver coal to a conveyor which in turn feed to a desliming screen where water is sprinkled to wash out coal fines (-) 1 mm size adhere to coal. Coal fines will flow through a launder below the screen to a set of desliming sieve bends and then flow through pipes to a fines coal tank.

The screen coal (-) 50 mm to (+) 6 mm size will be feed to a central column provided at the center of Heavy Media Tank. The magnetite will also be provided to central column. Magnetite slurry (media) is being prepared with a preset specific gravity. The mixture of coal and media will be pumped to Heavy Media Cyclone to separate out clean coal and reject by cyclonic process.

Then both clean coal and reject coal will be washed through clean coal screen and reject screen respectively to separate out the media adhering to coal and reject in the first compartment. Fine coal is washed from clean coal and reject coal will be collected below the screen in the second compartment. Washed clean coal and reject will be transported by separate conveyors to be stocked in clean coal and reject pile respectively.

The washed media will be collected in a dilute media tank and then pumped to the Magnetic Separator to separate and collect media / magnetite. The effluent of magnetic separator flow to fine coal tank. The density of magnetite media will be accurately controlled with respect to maintain required quality of washed product.

The fine coal slurry collected below screen will be feed to fine coal tank and then pumped to a set of classifying cyclones. Under flow of classifying cyclone will flow to High Frequency screen. The over flow of classifying cyclones will be feed to a high rate thickener. Flocculent will be added to thickener to facilitate settling process. The under flow of thickener will pass through a Belt press. The fine coal cake collected from belt press in turn will be mixed with clean coal. The over flow of the thickener will flow to Clarified water tank and this water will be utilized in the process and spray of sprinklers over the screens. In Clarified water tank make up water shall also be added for circulation into the system.

The underflow of classifying cyclones shall be dewatered in High Frequency Screen. The underflow of High Frequency Screen shall be transported back to the Fine Coal Tank while the overflow of the High Frequency Screen shall be collected on Belt Conveyor and mixed with Clean Coal at the ground storage.

The overflow from classifying cyclones shall be fed to a High Rate Thickener (18 Mtr. Dia.). Flocculants shall be used in Thickener to facilitate Settling process. The thickened slurry collected at the Thickener bottom / under flow shall be pumped and transported to a Belt press / series of Settling Ponds. Clarified water from the Settling Ponds shall be pumped back to the Clarified Water Tank adjacent to the Thickener.

Make up water and make up magnetite will be added as required in the process.

The clean coal will be dispatched to consumers through rail and road.

PROCESS CONTROL

Plant control shall be achieved by a centralized PLC based control system designed to enable one operator to start-up, monitor, and control and shut down all main equipment, and process functions from the feed input to the plant through to product transfer conveyors. The PLC shall have provision for hot standby. A UPS with hot standby back up shall be provided to take care of power tripping and fluctuations.

All major items of equipment will be interlocked in an automatic stopping sequence within the PLC in such a manner that both material and liquid flows will always be fail safe. Stop push buttons will be located adjacent to each drive and will be operable at all times.

An emergency stop button shall be located either in the control room or in the operating computer to enable the whole plant to be stopped.

The density of the magnetite media shall be accurately controlled within the wide range to maintain required quality of the washed products. The density measurement shall be done by a density gauge.

MEDIA PREPARATION & REGENERATION CIRCUIT.

The dilute media which is collected in the Dilute Media Tank shall be pumped by a Dilute Media Pump to a Magnetite Separator Feed Box from which the Dilute Media shall be fed to a Double Stage Magnetic Separator. The Separator shall separate out the Magnetite from water and the over-dense media gets dislodged from the Magnetic Drum to the Over-dense Media Launderers and from there to the Heavy Media Tank.

The effluent from the magnetic separator goes to Fine Coal Tank through wetting launders.

During the process of operation, some amount of Magnetite gets lost which shall be made up by adding fresh magnetite to the system. Magnetite powder mixed with water in a sump on the ground floor to make magnetite slurry. The dilute magnetite media then shall be pumped through a vertical sump pump to the Dilute Media Tank. Dilute Media will be processed through magnetic as detailed above. Thus make up magnetite is added here.

Receiving of ROM Coal & Dispatch of Products:

ROM Coal from Mine to Washery	Raw Coal is proposed from Tetaria Project - Mine, Magadh Coal Mines, Amrapali Coal Mines, Ashoka Coal Mines & other Coal Mines by road.
Dispatch of Clean Coal	Clean Coal will be dispatched to its customers by road/rail
Dispatch of Reject	Reject Coal will be dispatched to its customers by road/rail

Requirement of Water:

Water requirement for the proposed project will be 333 KLD will be sourced from Bore well (Ground water). Necessary permission will be taken from CGWA before receipt of EC. The project will conserve rainwater by providing collection tank. The collected water will be used for dust suppression and green belt. The location of the proposed washery is in safe zone as per CGWA.

Land Type Breakup:

Sl. No.	Description	ha
A	Non-Forest Land	7.48
A-1	Land Requirement for main plant	2.44
A-2	Raw Coal storage yard	1.41
A-3	Other facilities (internal road, lab room admin building etc)	0.65
A-4	Green belt	1.87
A-5	Open space	1.11
	Total	7.48
	Additional adjacent land for Greenbelt	3.89

Greenbelt:

Total Greenbelt area : 5.76 ha (Within plant boundary 1.87 ha + 3.89 ha on adjacent land owned by Director of the Company. No any industrial activity will be carried out on this adjacent land of 3.89 ha).

Risk and Hazard Mitigation measures:

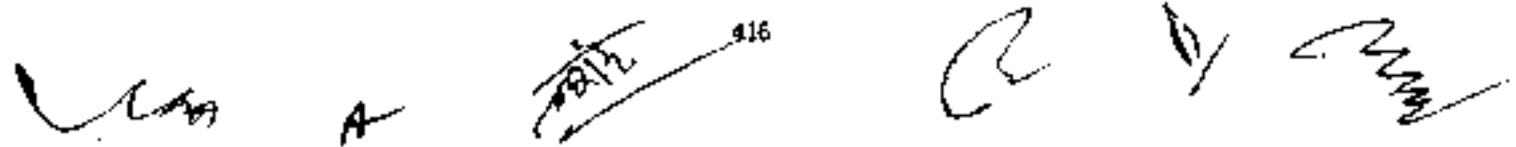
- Electrical installations will be designed in accordance with prescribed safety rules to ensure that electrical fire possibility is minimized.
- At the operational stage, all safety rules will be followed.
- Display of warning signs in operational area against fire and proper storage of inflammable material like diesel, etc.
- Provision of adequate firefighting arrangements with a ground water tank dedicated to firefighting exclusively.
- Organizing firefighting drills on regular basis and installation of Portable fire fighters at strategic locations all over the plant.
- Installation of smoke detectors with Fire Alarm.
- Details of Risk Management Plan shall be prepared and presented in EIA/EMP report.

STATUTORY CLEARANCES

1.	LOI/Lease docs	:	Land is purchased by mutual understanding with land owner.
2.	CO	:	The CO, Balumath vide letter no. 912, dated 11.07.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatyan & Register II.
3.	DFO Wild Life	:	Deputy Director, Palamau Tiger Project, South Division, Medinagar vide letter no. 797, dated 09.09.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve.
4.	DFO Territorial	:	Division Forest Officer, Latehar Forest Division vide letter no. 1613, dated 08/10/2024 certified that the distance of reserved / protected forest land is more than 250 meter from proposed project site.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 22, 23, 24, 25 & 26.10.2024, the Committee recommends for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure IV alongwith following specific condition :-

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- II. Complete material balance including the media and flocculants to be provided.
- III. Detailed water balance to be provided. Rain Water Harvested is also to be included.
- IV. Details of all the waste generation in the project along with handling and management of the same.
- V. Primary study to be carried out for Socio Economy, Ecology & Bio-Diversity, Geology and Hydro Geology.
- VI. Details of settling pond and cycle of concentration, if any.
- VII. Details of all the pollution control measures including ETP & STP, if any.
- VIII. Details of fire control management plan.
- IX. Proposal for upgradation of health facilities to be provided to the nearest PHC is to be included in the EIA / EMP report.
- X. Management plan for the railway siding to be specifically detailed.
- XI. Undertaking for implementation of ZLD is to be incorporated in EIA report.

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B. The old proposal being processed in PARIVESH 1.0

1. **Giridih Open Cast Project (0.70 MTPA capacity) of M/s Central Coalfields Limited, Village: Karharbari & Dhobidih, Anchal : Giridih, Thana no. : Karharbari – 194, Dhobidih – 193, Distt.: Giridih, Jharkhand (122.70 Ha).**

(Proposal No.:SIA/IH/CMIN/77491/2018)

Name of the consultant : CMPDI, R-III, Ranchi.

This is a violation project which has been taken for appraisal on 23.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Environmental Clearance (EC) after ToR.

This project is under violation category which was considered by SEAC first time for appraisal on 11.01.2023. SEAC raised ADS for which project proponent submitted the reply on 18.10.2024. Instant application is regarding reconsideration of EC for Giridih OCP (0.7 MTPA/122.70 ha) on meeting dated 23.10.2024.

Giridih Coalfield is one of the earliest coalfields in India. Mining activity in the coalfield started as early as 1871 by M/s Bengal Coal Company & by then State Railway and subsequently transferred to National Coal Development Corporation (NCDC) about 60 years back. Later in the year 1973, it came under the control of Central Coalfields Limited (CCL), a subsidiary of Coal India Limited. Presently it is under the administrative control of Giridih Area of CCL.

Giridih OCP is located in Giridih Coalfields, Giridih district, Jharkhand. The project is located within the latitude 24°10'3.62" and 24°10'42.73" N and longitude 86°14'51.63" and 86°15'41.80" E. The project is located about 6 km to the south of Giridih town. The nearest railway station Giridih is about 6 km from the project. Giridih railway station is on the Giridih-Madhupur line of the Asansol Railway division in the Eastern Railway Zone of Indian Railway. The general flow of the streams is towards south. Most of the streams meet Barakar River at about 7.84 km south-west of the proposed OCP. The water level is very close to the surface during rainy season and about 20m below surface during dry season.

The method of mining engaged to extract coal and OB in Giridih Opencast mine has been inclined slicing with shovel-dumper combination as the gradient of the seams vary from 6-10° with an average gradient of 8°. It is proposed to mine Balihill seams in Giridih OCP.

Giridih OC is a brownfield project which has been operational prior to nationalization era. The coal production capacity is 0.7 MTPA over a mine leasehold area of 122.70 ha. The balance mineable reserves available in Giridih OC are estimated at 2.30 MT and the life of the project is proposed as 4 years. The grade of coal available is G10.

The total project area of Giridih OCP is 122.70 Ha. The proposed land use during mining is as given below:

Land Use During Mining	
Particulars	Area (Ha.)
Quarry	56.95
External dump	18.68
Infrastructure, Road & others	4.80
Green Belt and Safety Zone	18.20
Vacant land	24.67
Total Area	122.70

The project has come into violation due to production in excess of peak production of 1993-94 level i.e. 0.23 MTPA during 17 years (1998-99 to 1999-00, 2003-04 to 2017-18). The coal production from Giridih DCP is given below: -

Financial Year	Coal Production (MTPA)
1993-94	0.23
1994-95	0.17
1995-96	0.20
1996-97	0.18
1997-98	0.20
1998-99	0.38
1999-00	0.26
2000-01	0.13
2001-02	0.15
2002-03	0.19
2003-04	0.32
2004-05	0.33
2005-06	0.37
2006-07	0.35
2007-08	0.35
2008-09	0.41
2009-10	0.40
2010-11	0.48
2011-12	0.49
2012-13	0.53
2013-14	0.50
2014-15	0.42
2015-16	0.45
2016-17	0.30
2017-18	0.45
2018-19	0.19
2019-20	0.13
2020-21	0.12
2021-22 (upto Dec'21)*	0.09

*Mine operation suspended since Jan'22 due to non-renewal of CTO.

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Details of Mineable Reserves and OB Removal:

Year	Coal Production (MT)	OB Removal (Mcum)	Stripping Ratio (cum/te)
1	0.70	1.76	2.52
2	0.70	1.76	2.52
3	0.70	1.76	2.52
4	0.20	0.51	2.52
TOTAL	2.30	5.80	2.52

Thana No.:-

DHOBIDIH: -193

KARHARBARI: -194

Lease Area/Project Area:-122.70 Ha.

NAME OF MOUZA:-DHOBIDIH and KARHARBARI.

KHATA No.:-

DHOBIDIH: -1,3,5,7,8,9,10,11, 12 & 13

KARHARBARI: -111, 114, 145, 147, 148, 160, 194, 276, 350, 354, 356, 357, 359, 360, 361, 363, 364, 371, 373, 375, 377, 382, 383, 386, 387, 388, 389, 390, 393, 405, 407, 417, 433, 437, 439, 440, 441, 446, 448, 451, 453, 454, 456, 508, 512, 1420

PLOT No.:-

DHOBIDIH: -247(P), 248(P), 249(P), 287(P), 288(P), 296(P), 308(P), 309(P), 310(P), 311(P), 315(P), 316(P), 317 to 349, 350(P), 352.

KARHARBARI: -1403 to 1405, 1406(P), 1419(P), 1420(P), 1508(P), 1533(P), 1534, 1535(P), 1536(P), 1546(P), 1547 to 1551, 1552(P), 1553 to 1612, 1613(P), 1614(P), 1639(P), 1678(P), 1679(P), 1680(P), 1681(P), 1682 to 1683, 1684(P), 1685(P), 1694(P), 1695(P), 1696, 1697(P), 1698(P), 1699 to 1734, 1735(P), 1736(P), 1737(P), 1738(P), 1905(P), 1906, 1907(P), 1914(P), 1915 to 1932, 1933(P), 1934(P), 1936(P), 1939(P), 1941(P), 1942(P), 1943(P), 1944(P), 1945(P), 1946 to 2011, 2012(P), 2013(P), 2014(P), 2015(P), 2016(P), 2017(P), 2018(P), 2019, 2020(P), 2021(P), 2022 to 2023, 2024(P), 2025 to 2026, 2027(P), 2028(P), 2123(P), 2124 to 2129, 2130(P), 3078(P), 3079(P), 3080, 3096(P), 3097(P), 3099 to 3102.

Sl. No.	NAME OF MOUZA	THANA NO.	KHATA NO.	PLOT NO.	AREA IN ACRES	AREA IN Ha.
1	DHOBIDIH	193	13	247(P)	0.42	0.17
2	"	"	13	248(P)	17.62	7.13
3	"	"	13	249(P)	2.32	0.93
4	"	"		287(P)	0.05	0.02
5	"	"	8	288(P)	0.52	0.21
6	"	"		296(P)	0.12	0.05
7	"	"	7	308(P)	0.72	0.29

8	"	"	5	309(P)	0.37	0.15
9	"	"	3	310(P)	0.12	0.05
10	"	"		311(P)	0.01	0.01
11	"	"		315(P)	0.07	0.03
12	"	"	13	316(P)	2.15	0.87
13	"	"	13	317	0.02	0.01
14	"	"	7	318	0.25	0.10
15	"	"	1	319	0.25	0.10
16	"	"	13	320	0.10	0.04
17	"	"	9	321	0.19	0.08
18	"	"	13	322	0.18	0.07
19	"	"	9	323	0.15	0.06
20	"	"	9	324	0.13	0.05
21	"	"	13	325	0.36	0.14
22	"	"	9	326	0.07	0.03
23	"	"	9	327	0.08	0.03
24	"	"	13	328	0.13	0.05
25	"	"	9	329	0.52	0.21
26	"	"	9	330	0.30	0.12
27	"	"	11	331	0.01	0.01
28	"	"	11	332	0.71	0.29
29	"	"	13	333	0.24	0.10
30	"	"	1	334	0.34	0.14
31	"	"	8	335	0.20	0.08
32	"	"	9	336	0.08	0.03
33	"	"	9	337	0.08	0.03
34	"	"	9	338	0.15	0.06
35	"	"	10	339	0.43	0.17
36	"	"	10	340	0.06	0.02
37	"	"	13	341	0.02	0.01
38	"	"	13	342	0.19	0.08
39	"	"	12	343	0.02	0.01
40	"	"	12	344	0.01	0.01
41	"	"	13	345	1.45	0.58
42	"	"	12	346	0.25	0.10
43	"	"	9	347	0.24	0.10
44	"	"	5	348	0.19	0.08
45	"	"	9	349	0.41	0.17
46	"	"	13	350(P)	2.69	1.09
47	"	"		352	0.09	0.04
	DHOBIDIH			Total	35.08	14.20

Sl. No.	NAME OF MOUZA	THANA NO.	KHATA NO.	PLOT NO.	AREA IN ACRES	AREA IN Ha
1	KARHARBARI	194	147	1403	0.74	0.30
2	"	"	147	1404	1.69	0.68
3	"	"		1405	0.01	0.01
4	"	"	148	1406(P)	24.77	10.02
5	"	"	160	1419(P)	0.20	0.08
6	"	"	512	1420(P)	111.72	45.21
7	"	"	512	1508(P)	0.12	0.05
8	"	"	439	1533(P)	0.52	0.21
9	"	"		1534	0.15	0.06
10	"	"		1535(P)	0.42	0.17
11	"	"	433	1536(P)	0.06	0.02
12	"	"		1546(P)	0.13	0.05
13	"	"	512	1547	0.08	0.03
14	"	"	437	1548	0.24	0.10
15	"	"	437	1549	0.67	0.27
16	"	"		1550	0.54	0.22
17	"	"		1551	0.53	0.21
18	"	"	512	1552(P)	0.60	0.24
19	"	"	512	1553	0.12	0.05
20	"	"	359	1554	0.88	0.37
21	"	"	512	1555	0.02	0.01
22	"	"		1556	0.58	0.23
23	"	"	437	1557	0.57	0.23
24	"	"	437	1558	0.01	0.01
25	"	"		1559	0.01	0.01
26	"	"	437	1560	0.02	0.01
27	"	"		1561	0.02	0.01
28	"	"	359	1562	0.03	0.01
29	"	"	359	1563	0.13	0.05
30	"	"	441	1564	0.41	0.17
31	"	"	441	1565	0.03	0.01
32	"	"		1566	0.05	0.02
33	"	"		1567	0.66	0.27
34	"	"		1568	0.02	0.01
35	"	"		1569	0.39	0.16
36	"	"	512	1570	0.01	0.01
37	"	"		1571	0.15	0.06

38	"	"		1572	0.20	0.08
39	"	"	512	1573	0.20	0.08
40	"	"		1574	0.35	0.15
41	"	"	512	1575	0.18	0.07
42	"	"		1576	0.26	0.11
43	"	"	512	1577	0.25	0.10
44	"	"	512	1578	0.68	0.28
45	"	"		1579	0.20	0.08
46	"	"		1580	0.23	0.10
47	"	"		1581	0.75	0.30
48	"	"		1582	0.49	0.20
49	"	"		1583	0.25	0.10
50	"	"	512	1584	0.08	0.03
51	"	"		1585	0.35	0.14
52	"	"		1586	0.07	0.03
53	"	"		1587	0.36	0.15
54	"	"		1588	0.23	0.09
55	"	"		1589	0.25	0.11
56	"	"		1590	0.07	0.03
57	"	"	453	1591	0.11	0.04
58	"	"		1592	0.17	0.07
59	"	"	512	1593	0.20	0.08
60	"	"	512	1594	0.59	0.24
61	"	"		1595	0.24	0.10
62	"	"		1596	0.33	0.13
63	"	"		1597	0.07	0.03
64	"	"		1598	0.72	0.29
65	"	"	512	1599	0.68	0.28
66	"	"		1600	0.21	0.08
67	"	"	512	1601	0.96	0.39
68	"	"	512	1602	0.01	0.01
69	"	"	364	1603	0.12	0.05
70	"	"	512	1604	0.48	0.19
71	"	"	512	1605	0.11	0.04
72	"	"	364	1606	0.67	0.27
73	"	"	512	1607	0.05	0.02
74	"	"	440	1608	0.06	0.02
75	"	"	440	1609	0.03	0.01
76	"	"	512	1610	0.11	0.04
77	"	"	440	1611	1.09	0.44
78	"	"	512	1612	0.31	0.13
79	"	"		1613(P)	0.25	0.10

80	"	"		1614(P)	0.01	0.01
81	"	"	512	1639(P)	0.96	0.39
82	"	"		1678(P)	0.04	0.02
83	"	"	386	1679(P)	0.28	0.01
84	"	"	446	1680(P)	0.03	0.01
85	"	"		1681(P)	0.58	0.23
86	"	"		1682	0.08	0.03
87	"	"		1683	0.06	0.02
88	"	"		1684(P)	0.04	0.01
89	"	"	361	1685(P)	0.02	0.01
90	"	"		1694(P)	0.01	0.01
91	"	"		1695(P)	0.49	0.20
92	"	"		1696	0.03	0.01
93	"	"	512	1697(P)	0.22	0.09
94	"	"	512	1698(P)	0.33	0.13
95	"	"	512	1699	0.26	0.11
96	"	"	512	1700	0.56	0.23
97	"	"	512	1701	0.15	0.06
98	"	"	407	1702	0.39	0.16
99	"	"		1703	0.31	0.13
100	"	"	456	1704	0.37	0.15
101	"	"		1705	0.03	0.01
102	"	"		1706	0.06	0.02
103	"	"		1707	0.06	0.02
104	"	"		1708	0.20	0.08
105	"	"		1709	0.05	0.02
106	"	"		1710	0.08	0.03
107	"	"	456	1711	0.25	0.10
108	"	"		1712	0.69	0.28
109	"	"	512	1713	0.01	0.01
110	"	"	357	1714	0.36	0.15
111	"	"		1715	0.24	0.10
112	"	"	360	1716	0.27	0.11
113	"	"	512	1717	0.04	0.02
114	"	"	512	1718	0.01	0.01
115	"	"	382	1719	0.27	0.11
116	"	"		1720	0.09	0.04
117	"	"		1721	0.10	0.04
118	"	"		1722	0.14	0.06
119	"	"		1723	0.02	0.01
120	"	"		1724	0.22	0.09
121	"	"	512	1725	1.36	0.55

122	"	"		1726	0.05	0.02
123	"	"		1727	0.22	0.09
124	"	"	357	1728	0.26	0.11
125	"	"		1729	0.17	0.07
126	"	"		1730	0.21	0.08
127	"	"	454	1731	0.29	0.12
128	"	"		1732	0.37	0.15
129	"	"	512	1733	0.21	0.08
130	"	"		1734	0.14	0.06
131	"	"	512	1735(P)	0.30	0.12
132	"	"	389	1736(P)	0.60	0.24
133	"	"		1737(P)	0.07	0.03
134	"	"	512	1738(P)	0.07	0.03
135	"	"		1905(P)	0.18	0.07
136	"	"		1906	0.06	0.02
137	"	"	350	1907(P)	0.03	0.01
138	"	"	512	1914(P)	0.08	0.03
139	"	"		1915	0.15	0.06
140	"	"		1916	0.07	0.03
141	"	"	454	1917	0.02	0.01
142	"	"	357	1918	0.01	0.01
143	"	"	454	1919	0.02	0.01
144	"	"		1920	0.12	0.05
145	"	"		1921	0.35	0.14
146	"	"		1922	0.42	0.17
147	"	"		1923	0.41	0.17
148	"	"		1924	0.05	0.02
149	"	"	417	1925	0.20	0.08
150	"	"	454	1926	0.17	0.07
151	"	"		1927	0.09	0.04
152	"	"		1928	0.34	0.14
153	"	"	454	1929	0.30	0.12
154	"	"		1930	0.06	0.02
155	"	"		1931	0.03	0.01
156	"	"	405	1932	0.15	0.06
157	"	"		1933(P)	0.41	0.17
158	"	"		1934(P)	0.30	0.12
159	"	"		1936(P)	0.11	0.04
160	"	"		1939(P)	0.03	0.01
161	"	"	512	1942(P)	0.67	0.27
162	"	"	389	1941(P)	0.02	0.01
163	"	"	354	1943(P)	0.04	0.02

164	"	"		1944(P)	0.06	0.02
165	"	"	363	1945(P)	0.13	0.05
166	"	"	356	1946	0.07	0.03
167	"	"		1947	0.17	0.07
168	"	"		1948	0.47	0.19
169	"	"	354	1949	0.05	0.02
170	"	"		1950	0.34	0.14
171	"	"	512	1951	0.01	0.01
172	"	"		1952	0.30	0.12
173	"	"	508	1953	0.21	0.08
174	"	"	512	1954	0.01	0.01
175	"	"	363	1955	0.11	0.04
176	"	"	1420	1956	0.06	0.02
177	"	"	373	1957	0.07	0.03
178	"	"		1958	0.23	0.09
179	"	"		1959	0.21	0.08
180	"	"		1960	0.17	0.07
181	"	"		1961	0.13	0.05
182	"	"		1962	0.16	0.06
183	"	"		1963	0.43	0.17
184	"	"		1964	0.51	0.21
185	"	"		1965	0.09	0.04
186	"	"		1966	0.70	0.28
187	"	"		1967	0.38	0.15
188	"	"	393	1968	0.29	0.12
189	"	"		1969	0.07	0.03
190	"	"		1970	0.60	0.24
191	"	"	448	1971	0.09	0.04
192	"	"	512	1972	2.26	0.91
193	"	"		1973	0.66	0.27
194	"	"		1974	0.22	0.09
195	"	"	364	1975	0.19	0.08
196	"	"	377	1976	0.12	0.05
197	"	"		1977	0.13	0.05
198	"	"		1978	0.21	0.08
199	"	"		1979	0.38	0.15
200	"	"		1980	0.47	0.19
201	"	"	388	1981	0.33	0.13
202	"	"	512	1982	0.40	0.16
203	"	"		1983	0.23	0.09
204	"	"	383	1984	0.22	0.09
205	"	"		1985	0.23	0.09

206	"	"	448	1986	0.03	0.01
207	"	"	512	1987	0.06	0.02
208	"	"		1988	0.26	0.11
209	"	"		1989	0.26	0.11
210	"	"		1990	0.13	0.05
211	"	"	448	1991	0.66	0.27
212	"	"	371	1992	0.54	0.22
213	"	"	512	1993	0.24	0.10
214	"	"	512	1994	0.17	0.07
215	"	"	383	1995	0.07	0.03
216	"	"	512	1996	0.08	0.03
217	"	"	512	1997	0.03	0.01
218	"	"		1998	0.26	0.11
219	"	"	512	1999	0.90	0.36
220	"	"		2000	0.85	0.34
221	"	"	512	2001	0.17	0.07
222	"	"	512	2002	0.10	0.04
223	"	"	512	2003	0.03	0.01
224	"	"	512	2004	0.05	0.02
225	"	"	512	2005	1.43	0.58
226	"	"	512	2006	0.30	0.12
227	"	"	512	2007	0.55	0.22
228	"	"	276	2008	0.28	0.12
229	"	"		2009	0.40	0.16
230	"	"		2010	0.03	0.01
231	"	"		2011	0.15	0.06
232	"	"		2012(P)	0.18	0.08
233	"	"	451	2013(P)	0.20	0.09
234	"	"		2014(P)	0.01	0.01
235	"	"		2015(P)	0.06	0.02
236	"	"		2016(P)	0.19	0.08
237	"	"	375	2017(P)	0.19	0.08
238	"	"		2018(P)	0.26	0.11
239	"	"	390	2019	0.04	0.02
240	"	"	390	2020(P)	0.35	0.14
241	"	"	512	2021(P)	0.33	0.13
242	"	"		2022	0.18	0.08
243	"	"		2023	0.10	0.04
244	"	"	448	2024(P)	0.03	0.01
245	"	"	387	2025	0.04	0.02
246	"	"	1420	2026	0.05	0.02
247	"	"		2027(P)	0.11	0.05

248	"	"	512	2028(P)	2.34	0.95
249	"	"		2123(P)	0.06	0.02
250	"	"		2124	0.41	0.17
251	"	"	114	2125	2.03	0.82
252	"	"	114	2126	0.01	0.01
253	"	"	111	2127	3.58	1.45
254	"	"		2128	0.91	0.38
255	"	"	111	2129	0.94	0.39
256	"	"	114	2130(P)	7.21	2.92
257	"	"		3078(P)	1.02	0.41
258	"	"		3079	1.02	0.41
259	"	"	114	3080	9.46	3.83
260	"	"		3096(P)	0.05	0.02
261	"	"	114	3097(P)	27.62	11.18
262	"	"	114	3099	6.82	2.76
263	"	"	194	3100	3.04	1.23
264	"	"		3101	0.93	0.38
265	"	"	145	3102	0.19	0.08
	KARHARBARI			Total	268.10	108.50
Total Area					303.18	122.70

Land Case Details in between DFO & CCL:-

Total project area of Giridih OCP is 122.70 ha. Out of 122.70 ha 82.83 ha is demarcated but not notified forest land in the record of State Forest department (below mentioned land is broken before 1980).

DFO Giridih East Division has issued a letter vide no. 3368 dated 18.10.2024 stating that 82.83 ha of land in Giridih OCP was broken before 1980.

DFO Giridih East Division has also stated that FC Act, 1980 is not applicable on below mentioned 82.83 ha of land.

LAND DETAILS OF Forest Land GIRIDIH OC MINE 82.83 HA					
S.No.	NAME OF MOUZA	THANA NO.	KHATA NO.	PLOT NO.	AREA IN Ha.
1	DHOBIDIH	193	13	247(P)	0.17
2	"	"	13	248(P)	7.13
3	"	"	8	288(P)	0.21
TOTAL					7.51
S.No.	NAME OF MOUZA	THANA NO.	KHATA NO.	PLOT NO.	AREA IN Ha.
1	KARHARBARI	194	147	1403	0.30
2	"	"	147	1404	0.68
3	"	"		1405	0.01
4	"	"	148	1406(P)	10.02

5	"	"	512	1420(P)	45.21
6	"	"	512	3080	3.83
7	"	"		3096(P)	0.02
8	"	"	146	3097(P)	11.18
9	"	"	114	3099	2.76
10	"	"	114	3100	1.23
11	"	"	146	3102	0.08
Total					75.32
Total Area					82.83

As per new VAN (SANRAKSHAN EVAM SAMVARDHAN) RULES, 2023, it is mentioned in CHAPTER-1, Page No.:- 32, 1.3 Part(i) stated that :-

Supreme Court order dated 07.05.1985 : State Of Bihar vs Banshi Ram Modi & Ors in the Hon'ble Supreme Court of India: We are, therefore, of the view that while before granting permission to start mining operations on a virgin area section 2 of the Act has to be complied with it is not necessary to seek the prior approval of the Central Government for purposes of carrying out mining operations in a forest area which is broken up or cleared before the commencement of the Act".

As noted above, the mining lease was granted before the Act came into force, and the land was broken before 1980. Therefore, Section 2(ii) of the Forest Conservation Act, 1980, is not applicable.

STATUTORY CLEARANCES :

1	LOI/Lease docs	:	Land has been Transferred to National Coal Development Corporation (NCDC)
2	CO	:	The CO, Giridih Sadar vide letter no. 1287, dated 23.12.2022 has mentioned the plot no. of the project is not recorded as "Jangle Jhari" in R.S. Khatiyan & Register II.
3	DFO Wild Life	:	DFO, Wildlife Hazaribagh vide letter no. 1761, dated 08.09.2022 certified that the said project is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
4	DFO Forest Distance	:	DFO, Giridih East Division vide letter no. 2915, dated 17.08.2022 certified that the distance of reserved / protected forest is less than 250 m from proposed project site.
5	Mine Plan Approval	:	Ref No.: - CS/BM/515/2022/209, Dated: - 17.06.2022.
6	Public Hearing	:	Public Hearing conducted on 26.02.2022
7	Terms of Reference (ToR)	:	Violation Terms of Reference (ToR) granted by MoEF&CC, Govt. of India vide F.No. 23-268/2018-IA.III (V), Dated

		27.04.2021.
8	CGWA	: CGWA/NoC/MIN/REN/1/2024/9925 dated 11.09.2024 valid upto 02.12.2025.

Wildlife Conservation Plan:

- Capital Cost for Flora & Fauna management proposed - ₹ 60.00 Lakhs
- Total cost of Afforestation program (4 Years): - ₹ 40.00 Lakhs
- Total Revenue cost: Yearly Cost: ₹ 112.00 lakhs (considering yearly cost @ ₹ 28 Lakhs)
- Thus Total accumulative cost is ₹ 212 Lakhs during life of the mine.

The Wildlife Conservation Plan has been submitted to DFO (Girdih East) vide letter dated 02/01/2023.

Public Hearing:

Public Consultation for Girdih OC (0.7 MTPA / 122.70 ha) was conducted on 26.02.2022 as per the EIA Notification, 2006 and Terms of Reference (ToR) granted by MoEF&CC.

Based on issues raised during Public Hearing, the following activities have been proposed in the nearby villages:

Sl. No.	Proposed Activities	Budget allocation (Rs., in crore)
1.	Beautification/Computerization/construction of classrooms/boundary wall of School and Aganwadi Kendra	1.00
2.	Construction of Overhead water tank and Water supply at Gopai, Guhiyatand and Dohbidih Village.	
3.	Construction of Check Dam at Sirmohan Nala in Dohbidih Village	
4.	Solar Light Facility at Gopai, Dohbidih and karharbari village	

Data w.r.t Routine Environmental Monitoring being done for Girdih OC:

The routine environmental monitoring is being done for Girdih OC through CMPDI Ranchi in fortnightly interval. The copy of the Routine Environment Monitoring report for the quarter (April, 2024 till June, 2024) .

Need Based Socio-Economic Study for Girdih OCP:

This project has been a major economical source to the nearby villagers. This project, when in operation, provides direct employment to around 742 persons and indirect employment to several local villagers. The project has also brought about enhanced socio-economic benefits to local population due to expenditure on CSR activities.

The following activities have been proposed in the nearby villages of Dohbidih, karharbari and Gopai.

S.No.	Activity Proposed	Total (in Lakhs) Rs.
1.	Additional Skill development training programme to the unemployed youth	10

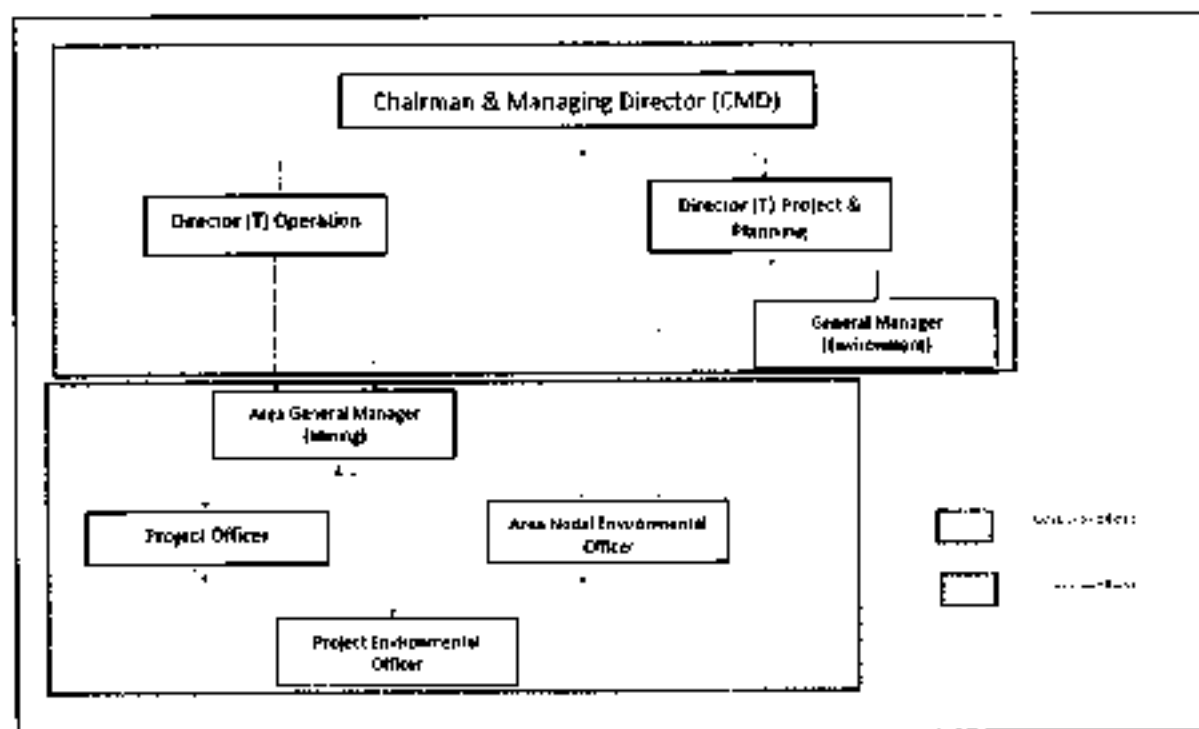
2.	Deep Boring with Solar motor pump in Dhobidih, karharbari and Gopai.	20
3.	PCC Road at Dhobidih karharbari and Gopai.	50
4.	Organizing additional sports and cultural festivals	20
Total Socio-Economic		100

The Supreme Court judgment dated 02.01.2024 is not applicable to Giridih OCP:

Giridih OCP does not fall under the purview of the OM dated 07.07.2021. The SOP included penalty provisions for violation cases where applications were not submitted by the time of the OM (as stated in points 12.a and b of the SOP). In contrast, the application for Giridih OCP was submitted earlier on 13.04.2018, in accordance with the S.O no. 804(E) dated 14.03.2017 and 16.03.2018, and the ToR was issued under the provisions of the Ministry's notification dated 14.03.2017. Therefore, the Supreme Court judgment dated 02.01.2024 is not applicable to Giridih OCP.

Organization chart for Environmental Management:

The Organization chart for Environmental Management is given in the subsequent page:



Further, an Environment Management Committee would be constituted at the project level, which will be responsible for implementation of Environmental clearance conditions, approved EMP, regular environmental quality monitoring, proper running of effluent treatment plant and liaison with regulatory bodies like JSPCB and CPCB. The Committee shall be headed by Project Officer / Manager and will be assisted by supporting staff and workmen.

In addition to the above Environmental Cell, CCL, HQ., G.M. (Env.) HQ. under the guidance of Director Technical (Project & Planning) will periodically inspect the project for monitoring the

implementation of EMP and environmental status of the project surroundings and necessary guidelines will be given to the project authorities.

On the other hand for implementation of area level protection measures in respect of mine water and mining colony effluent treatment, dust suppression at mine, plantation and green belt development over the backfilled and dump areas, environmental quality monitoring etc., will be taken up by the organization.

Co-ordination between various disciplines, periodic monitoring of various environment protection measures will be done by a senior executive who reports directly to the area General Manager. He will be assisted by Area Environmental Officer who is oriented towards and versed with various aspects of environmental pollution and control in mining areas.

During the consideration of the project on 11.01.2023 the following documents / clarifications were sought from Project Authority :

- i. Commitment to carry out 05 tier plantation is to be submitted.
- ii. Communication with MoEF&CC regarding submission of the project for consideration of the project by SEIAA is to be provided as the ToR was granted by MoEF&CC.
- iii. Proposed post mining land use plan is to be corrected & submitted.
- iv. Commitment to do plantation in the safety zone within the first year of operation.
- v. Site plan to be revised to include the existing settling pond.
- vi. Routine noise monitoring data is to be provided.
- vii. The revised remediation plan and natural and community resource augmentation plan is to be provided.

All the above has been satisfactorily addressed by the project authority.

The PAs has proposed the remediation plan and natural & community resource augmentation plan before the Committee in the light of S.O no. 804(E), dated 14.03.2017 and further amendment vide S.O. dated 16.03.2018 issued by MoEF&CC, Govt. of India.

On the basis of above the State Level Expert Appraisal Committee (SEAC), Jharkhand recommended an amount of rupees 1620.22 Lakh as per CPCB guidelines towards remediation plan and natural & community resource augmentation plan to be spent within a period 03 years. The details of summary of Natural resource and Environmental / Ecological Damage assessment with budgetary provision for expenditure under the below mention head for remediation :-

NCRAP:

The damage assessment study on account of violation has been done and estimated damage is INR 15.89 crores.

Against the same, proposed NCRAP fund committed by the project is INR 16.20 crores.

As suggested during appraisal by SEIAA during previous meeting 11/01/2023, the proposed fund allocation for remediation plan and Natural Resource Augmentation Plan has been duly revised with inclusion of requisite site specific measures.

The detailed break-up w.r.t the NCRAP fund along with activities have been presented in the table below:

Proposed budgetary provisions for Damage Remediation Plan (revised)

Natural & Community Resource remediation plan & budgetary provisions			Year-wise break-up		
Sr. No.	Activity Proposed*	Total (₹) in lakhs	Year 1	Year 2	Year 3
(A)	<i>Natural resource remediation</i>				
01	Addressing human-wildlife conflict (Engaging manpower, monitoring vehicle, equipment, signages, etc.)	179.47	78.96	52.86	47.65
02	Snake catcher & kits	12.94	3.22	4.64	5.08
03	Monkey management	3.68	3.68	0.00	0.00
04	Fire Protection Measures for wildlife & forests	284.59	96.41	132.72	55.46
05	Habitat Management for wildlife and forests	6.30	3.15	3.15	0.00
06	Soil moisture control via plantation & checkdam construction	275.90	244.40	21.00	10.50
07	Development of GIS cell for monitoring by DFO	19.81	6.91	8.90	4.01
08	Community development & awareness initiatives	420.53	263.03	126.00	31.50
09	Field infrastructure Augmentation	20.00	16.36	3.65	0.00
	Net Total	1223.22	716.11	352.91	154.20
(B)	<i>Community resource remediation</i>				
01	Construction of community hall at Makplto village, Navatand village, Balondinga village, Mahuatand village, Kolimaran village and Paparwatand Durga Mandap	150.00	50.00	50.00	50.00
02	Construction of multi-purpose hall in temple compound, Paparwatand village	25.00	9.00	8.00	8.00
03	Construction of mini stadium near HS school playground, Maheshlundi	25.00	9.00	8.00	8.00
04	Construction of drains & PCC road, Kailbad village	25.00	9.00	8.00	8.00
05	Construction of drain, Paparwatand village	8.00	3.00	3.00	2.00
06	Construction of paver's block, Middle school, Dhobidih village & at Mahuatand village	17.00	6.00	6.00	5.00
07	PCC Road & Guardwall construction, Karharbari village	24.00	8.00	8.00	8.00
08	PCC Road construction at sites in Navatand village, Narendrapur village, Karharbari village, Maheshlundi village and Khariadih village	59.00	20.00	20.00	19.00
09	Construction of bridge near ghat between Gappey village and Mahuatand	25.00	9.00	8.00	8.00
	Net Total	358.00	123.00	119.00	116.00

Natural & Community Resource remediation plan & budgetary provisions			Year-wise break-up		
Sr. No.	Activity Proposed*	Total (₹) in lakhs	Year 1	Year 2	Year 3
	TOTAL (A) + (B)	1581.22	839.11	471.91	270.20

*Finalized in consultation with DC (Giridih) & local mukhiyas as well as DFO (Giridih).

Details of EMP Cost saved during period of violation

S.No	EMP/EC Measures Supposed to be Implemented	Capital Cost Saved in Rs. In Lakhs (approx.)	Revenue Cost Saved in Rs. Lakhs (approx.)
1	Check-dam over Khakho river to aid flood control	50.00	-
2	Provision of toe walls with weep holes along foot of external dump	50.00	-
3	Periodic monitoring of water quality of surrounding water bodies	10.00	-
4	Handling and Management of Municipal Solid Waste		20
Total Cost Saved in Rs. Lakhs		110.00	20
Provision for CRAP= 3% of total EMP Cost saved during violation period in Rs. Lakhs		Approx. 4.00 lakhs	

Proposed budgetary provisions for Natural and Community Resource Augmentation Plan

Sl No	Activity Proposed	Total (Rs. In Lakhs)
1	Repair and maintenance of roads in nearby villages	10.00
2	Development of green belt along streams, ponds etc	10.00
3	Providing solar lamps along the roads and supply of Solar lights to households in nearby villages.	10.00
4	Training/Workshop on advance agriculture/irrigation practices	5.00
Total		35.00

Total Budget for NCRAP proposed

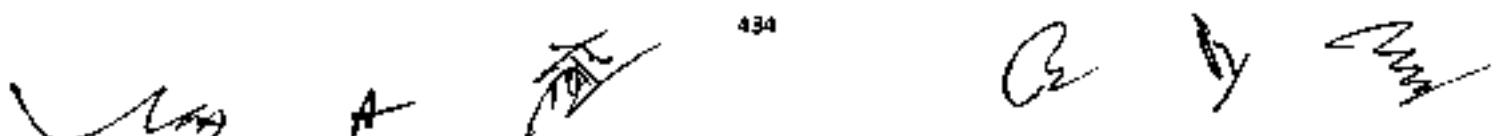
Sr. No:	Head	Total (Rs. in lakhs)
1	Damage Remediation Plan	1581.22
2	EMP Cost saved during violation	4.00
3	Natural & Community Resource Resources Augmentation Plan	35.00
	TOTAL (INR in lakhs)	1620.22

1. Total budgetary provision with respect to remediation plan and natural and community resource augmentation plan is Rs. 1620.22 Lakh.

- II. Therefore, PAs shall be required to submit a bank guarantee of an amount of Rs 1620.22 Lakh towards remediation plan and natural and community resource augmentation plan with the Jharkhand State Pollution Control Board and evidence of the same submitted to SEIAA, Jharkhand prior to grant of EC.
- III. The bank guarantee shall be released after successful completion of remediation plan, duly recommended by the SEAC, Regional Office - MoEF&CC, Govt. of India and approval of regulatory authority. Remediation plan shall be completed in 03 years with the consultation of Local / Urban Bodies / State Govt. Deptt
- IV. Approval / permission from CGWA shall be obtained before drawing ground water for the project activities, if applicable. Jharkhand State Pollution Control Board shall not issue Consent to Operate (CTO) until the PAs obtains such permission.
- V. PAs shall take necessary other clearances / permissions under various act and rules if any, from the respective authorities / departments.
- VI. STP / ETP of adequate capacity shall be established within the project premises.
- VII. Energy conservation measures adhering to part of ECBC norms shall be complied with.
- VIII. Action will be taken for the violation by the Jharkhand State Pollution Control Board under the provision of section 19 the Environment (Protection) Act, 1986.

Based on the presentation made and information provided, the Committee decided that the proposal for Giridih Open Cast Project (0.70 MTY capacity) of M/s Central Coalfields Limited, Village: Karharbari & Dhobidih, Anchal: Giridih, Thana no.: Karharbari-194, Dhobidih-193, Dist.: Giridih, Jharkhand (122.70 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - V alongwith following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- II. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- III. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- IV. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- V. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.



A. Deputy Commissioner –cum- District Magistrate, Ranchi or through authorized representative.

I. Final District Survey Report (DSR) for Minor Minerals other than Sand Mining or River Bed Mining (Stone), Distt. Ranchi.

The Final DSR was submitted by Deputy Commissioner, Ranchi. He was represented by Md. Abu Hussain, District Mining Officer, Ranchi at the SEAC meeting on 24.10.2024.

During the meeting the DMO, Ranchi presented the DSR before the Committee. The DSR was appraised in light of S.O. no. 3611 (E), dated 25.07.2018 of MoEF&CC, Govt. of India.

The final DSR had been placed in the public domain on 19.06.2024. As per the Sub Divisional Committee no comments / observations were obtained.

The DSR has been prepared as per the format provided in the above notification. The DSR submitted has been approved by the Sub-Divisional Committee. All the aspects of the notification dated 25.07.2018 are incorporated in the DSR and found to be satisfactory.

Hence, the final DSR for Minor Minerals other than Sand Mining or River Bed Mining (Stone) of District Ranchi is recommended to SEIAA for approval.

B. Consideration of Proposals :

1. Brick Soil Mining for M/s Hero Bricks, Village : Barchorgain, Thana : Kisko, Thana no. : 88, Distt. : Lohardaga, Jharkhand (0.52 Ha).

(Proposal No : SIA/JH/MIN/ 470139/2024)

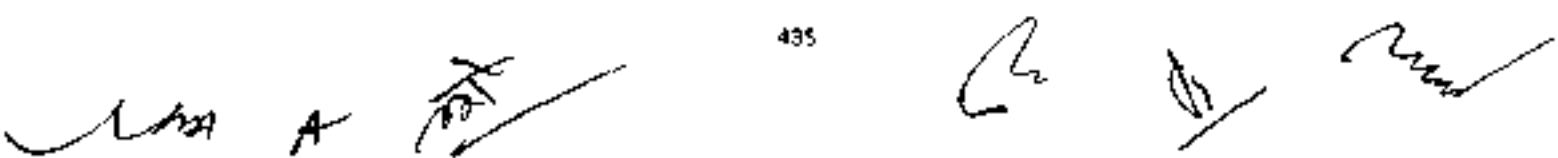
Name of the consultant : Crystal Consultants, Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 24.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Earthwork / Soil Mining (1200 Cum Per Annum for using of making of 6,00,000 Bricks Per Annum)



PROJECT and LOCATION Details:

Sl	Parameter	Details
1	Project Name	Brick Soil Mining for M/s Hero Bricks
2	Lessee:	M/s Hero Bricks Proprietor-Satyanarayan Sahu
3	Lessee Address	At-Barchorgain Jalka Toli, P.O.-Hisri, District-Lohardaga, Jharkhand-835302
4	Lease Area	0.52 Ha. Acres:
5	Type of Land	Non Forest – Rayatl Land
6	Project Cost	6.00 Lakhs
7	EMP Budget	Capital: 3.14 Lakhs Recurring: 2.04 Lakh / year
8	CSR / CER Budget	-
9	New or Expansion	New Project
10	Mineable Reserves	Cu.M.: 8050 cum Tonnes:
11	Mine Life	7 years
12	Man power	10
13	Water Requirement	Total 7.4 KLD Including Domestic (0.4 KLD), Dust Suppression (6.0 KLD) & Horticulture (1 KLD)
14	Water Source	From nearby villages/Nearest Canal by tankers
15	DG Set / power	0 KVA
16	Crusher	--
17	Nearest Water Body	Sukri Nadi (7.86 km in North-East direction)
18	Nearest Habitation	Hisri Nawatoli village (1.8 km in North-East direction)
19	Nearest Rail Station	Lohardaga Railway Station, 12.15 Km in East direction
20	Nearest Air Port	Birsa Munda Airport, Ranchi, 76.78 km in South-East direction
21	Nearest Forest	Nil
22	Road & Highways	National Highway – 143A is about 9.55 km in East direction

CO-ORDINATES

1	Latitude	N23°26'48.01"	TO N23°26'50.69"
2	Longitude	E84°35'15.75"	TO E84°35'21.07"

LAND DETAILS

KHATA NO.	PLOT NO.
136	686 & 690
98	692








STATUTORY CLEARANCES

1	LOI / Lease docs	:	Land agreement made.
2	CO	:	The CO, Kisko (Lohardaga) vide letter no. 698, dated 05.10.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatlyan.
3	DMO	:	DMO, Lohardaga vide memo no. 1198/M, dated 07.10.2023 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Ranchi vide letter no. 1061, dated 11.10.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Lohardaga Forest Division vide letter no. 1790, dated 09.10.2023 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved District Survey Report (DSR) of Lohardaga District (Sl. no. 54, Page no. 32)
7	Gram Sabha	:	BDO, Kisko (Lohardaga) vide letter no. 1017, Dated 17.10.2023 informed that Gram Sabha conducted on 10.10.2023.
8	Mine Plan Approval	:	Approved by DMO, Lohardaga vide Memo No. 1375/M, dated 28.11.2023.
9	Qualified Person	:	Shri P.K. Sen was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Method, Manual	
2	Quarry Area	:	5 years – 0.367 ha.	Life of Mine – 7 Year
3	Waste Generation	:	NA	Life of Mine – 7 Year
4	Stripping Ratio	:	NA	
5	Working Days	:	200	
6	Bench: size & No	:	1m x 1m	
7	Elevation of Mine	:	Highest elevation: 686m AMSL Lowest elevation: 684m AMSL	
8	Ground Level Elevation	:	684m AMSL to 686m AMSL	
9	Ultimate Working	:	2m	

	Depth		
10	Water Table	:	664m AMSL in Pre Monsoon to 672m AMSL in Post Monsoon
11	Topography of Mine	:	Almost flat
12	Explosive Requirement	:	Nil
13	Diesel/Fuel requirement	:	Nil

Production Details

Year	Production of Recoverable Soil Volume (in Cum)	Production of Brick Blocks (in nos.)
1 st	1200	6,00,000
2 nd	1200	6,00,000
3 rd	1200	6,00,000
4 th	1200	6,00,000
5 th	1200	6,00,000
Total	6000	30,00,000

Land Use:

Type of land use	Present Land Use (In Ha)	At the end of Plan Period (In Ha)	At the end of life of mines (In Ha)
Road	0.008	0.011	0
Quarry	0	0.367	0.480
Safety Zone	0	0.040	0.040
Total Area in used	0.008	0.418	0.520
Balance unused Area	0.512	0.102	0
Total Applied Area	0.520	0.520	0.520

Protection Measures for Post Mine Closure Action Plan

The mine site will be properly fenced properly. A board of Do Not Enter, Only Authorized Access will be fixed near the water reservoir area and at the gate of the mine site.

- A warning sign board will be erected at the site giving general information about the hazards at the site.
- The periphery of the water reservoir pit will be secured by constructing a parapet wall or gabion walls.
- Plantation is also proposed at the backfilled area along with around the benches.

ENVIRONMENT MANAGEMENT

Green Belt Development

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SL	LOCATION	Area (Ha.)	No. of Trees
1	Safety Zone	0.040	100
2	Approach road	0.024	120
	Total	0.064	220

- Gablon Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be used for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha' road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask etc. shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.

- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Risk & Hazards Management

Risk Assessment

It is a small manual mining by tractor & haulage. No major risk is anticipated.

Some anticipated risks are briefed below;

Minor Injuries

In Course of project activities during excavation of soil and its loading into tractor. There might be some minor personal Injury.

Road Accident

In course of haulage of soil to Brick kiln by tractor, road accident may happen.

Disaster Management Plan

i) Road Safety

Tractor driven will be instructed to ensure that speed of tractor on public road should be restricted to 15 KMPH.

Haulage road would be repaired & maintained regularly.

ii) An information centre would be maintained at office with telephone contact no. of local police station and hospital. In case of a road accident, police will be informed and arrangements would be made for medical aid to injured person.

iii) Arrangement for first aid to minor injuries to personnel working in the mine would be made in Temporary office.

Top Soil Management

During quarry development an amount of 960 cum of fertile top-soil will be generated and this produced top-soil will be preserved temporarily by dumping. This preserved top-soil will

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be spread concurrently over the excavated part of the land after the end of each year production of brick soil and grass cultivation will be done on it.

BUDGET

PROJECT COST	Capital Cost (INR)	Recurring Cost (INR / Year)
Land	0.00	30,000.00
Tools & Equipment	50,000.00	0.00
Infrastructure & Other Statutory Clearance	4,00,000.00	0.00
EMP	66,000.00	3,11,000.00
Total	5,16,000.00	3,41,000.00

ENVIRONMENT MANAGEMENT PLAN (EMP)	Capital Cost (INR)	Recurring Cost (INR / Year)
Reclamation & Rehabilitation of Excavated Pit	--	50,000.00
Water Tanker for Dust Suppression	0.00	2,00,000.00
Plantation in Safety Zone	66,000.00	11,000.00
Compliance & Monitoring	0.00	50,000.00
TOTAL	66,000.00	3,11,000.00

Environment Monitoring Programme :

S. No.	Description	No. Monitoring Stations	Duration
1	Air	3 Stations	6 Monthly
2	Soil	1 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	3 Stations	6 Monthly

Organizational Structure:

Introduction

The Environmental Management Plan (EMP) Cell has been established to ensure environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. This project aims to minimize environmental harm, promote sustainable practices, ensure compliance with regulations, and foster community engagement and transparency. The EMP Cell will provide a framework for identifying, assessing, and mitigating potential environmental impacts associated with the mining activities.

Environmental Policy

Our company is committed to:

- Minimizing environmental harm through responsible mining practices
- Promoting sustainable practices to conserve natural resources

- Ensuring compliance with regulatory requirements and industry standards
- Fostering community engagement and transparency through open communication

EMP Cell Objectives

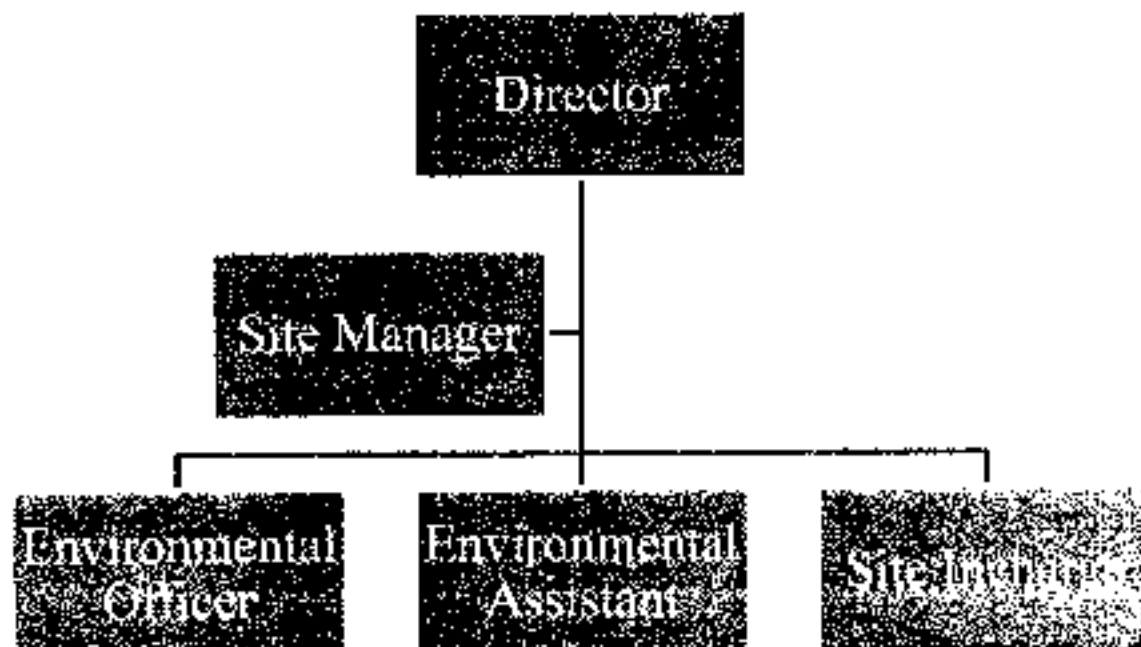
The EMP Cell objectives are:

- Minimize environmental impacts on air, water, soil, and biodiversity
- Ensure compliance with regulatory requirements and industry standards
- Promote sustainable practices through efficient resource utilization
- Enhance community engagement and transparency through regular updates

EMP Cell Structure

The EMP Cell consists of three members:

- Environmental Officer (EO) as Team Lead, responsible for overall strategy
- Environmental Assistant (EA) for Monitoring and Reporting, focusing on data collection
- Administrative Assistant (AA) for Documentation and Coordination, handling administrative tasks



EMP Cell structure

Roles and Responsibilities

Environmental Officer (EO)

- Develop, implement, and review EMP
- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide environmental training
- Manage environmental data collection
- Develop environmental policies
- Conduct site inspections
- Identify and mitigate environmental hazards
- Prepare quarterly reports

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Environmental Assistant (EA)

- Conduct field monitoring
- Collect and record environmental data
- Assist in data analysis and reporting
- Maintain monitoring equipment
- Conduct site inspections
- Assist in preparing quarterly reports
- Update environmental records
- Assist in implementing mitigation measures
- Participate in training programs
- Provide support to EO

Administrative Assistant (AA)

- Maintain environmental records
- Coordinate documentation
- Assist in preparing quarterly reports
- Manage environmental documentation
- Provide administrative support
- Coordinate training logistics
- Maintain communication with regulatory authorities
- Assist in updating policies
- Manage environmental budget
- Provide general administrative support

Director/Top Management Responsibilities

- Provide strategic direction
- Approve environmental policies
- Allocate resources
- Review quarterly reports
- Ensure compliance
- Foster environmental responsibility
- Support employee training
- Review environmental investments
- Ensure integration of environmental considerations

EMP Process Flow

The EMP process flow includes:

1. Environmental Monitoring
2. Data Analysis
3. Report Submission
4. Review and Revision
5. Implementation
6. Compliance Check

Key Decision Points

Key decision points include:

1. Non-compliance: Corrective action and Reporting

LAH - A [Signature] B [Signature] [Signature]

2. Environmental incidents: Investigation, Mitigation, and Reporting

Documentation

Documentation includes:

- EMP manual
- Monitoring records
- Reports
- Inspection records
- Training records

Implementation Timeline

The implementation timeline consists of:

1. Pre-Operational Phase (1 month): Establish EMP
2. Operational Phase (Ongoing): Implement EMP
3. Closure and Rehabilitation Phase (6 months): Restore mined land

Reporting

The EMP Cell will submit quarterly reports to:

- Company Director
- Regulatory authorities

Conclusion

The EMP Cell is committed to ensuring environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. With a clear structure, roles, and responsibilities, the EMP Cell is equipped to manage environmental impacts and promote sustainable practices.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Brick Soil Mining for M/s Hero Bricks, Village : Barchorgain, Thana : Kisko, Thana no. : 88, Distt. : Lohardaga, Jharkhand (0.52 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07 2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

2. **Brick Soil Mining for M/s Gulab Bricks, Village : Chandkopa, Thana : Senha, Thana no. : 145, Distt. : Lohardaga, Jharkhand (1.15 Ha).**

{Proposal No : STA/JH/MIN/ 470153/2024}

Name of the consultant :Crystal Consultants, Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 24.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Earthwork / Soil Mining (1600 Cum Per Annum for using of making of 8,00,000 Bricks Per Annum)

PROJECT and LOCATION Details:

Sl	Parameter	Details
1	Project Name	Brick Soil Mining for M/s Gulab Bricks
2	Lessee:	M/s Gulab Bricks Proprietor-Sri Upender Kumar Sahu
3	Lessee Address	At-Nigni, Gangurpara P.O.-Nigni, District-Lohardaga, Jharkhand-835302
4	Lease Area	1.15 Ha. Acres: 2.84
5	Type of Land	Non Forest – Rayati Land
6	Project Cost	Capital: 4.95 Lakhs Recurring: 3.57 Lakh / year
7	EMP Budget	Capital: 0.45 Lakhs Recurring: 3.07 Lakh / year
8	CSR / CER Budget	-
9	New or Expansion	New Project
10	Mineable Reserves	Cu.M.: 19031 cum Tonnes:
11	Mine Life	12 years
12	Man power	12
13	Water Requirement	Total 7.4 KLD Including Domestic (0.4 KLD), Dust Suppression (6.0 KLD) & Horticulture (1 KLD)
14	Water Source	From nearby villages/Nearest Canal by tankers
15	DG Set / power	0 KVA
16	Crusher	--
17	Nearest Water Body	Sukn Nadi (3.35 km in North-East direction)
18	Nearest Habitation	Patratu village (1.31 m in South-West direction)
19	Nearest Rail Station	Lohardaga Railway Station, 6.98 Km in East direction
20	Nearest Air Port	Birsa Munda Airport, Ranchi, 71.76km in South-East direction
21	Nearest Forest	Nil
22	Road & Highways	National Highway – 143A is about 4.73 km in south east direction

CO-ORDINATES

1	Latitude	: N23°26'54.72"	TO N23°27'00.89"
2	Longitude	: E84°38'18.86"	TO E84°38'22.78"

LAND DETAILS

Khata no.	Plot no.
211	26 & 35

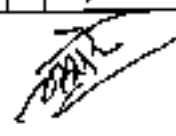
STATUTORY CLEARANCES

1	LOI / Lease docs	: Land agreement made.
2	CO	: The CO, Senha (Lohardaga) vide letter no. 894, dated 16.09.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatyan.
3	DMO	: DMO, Lohardaga vide memo no. 1173/M, dated 04.10.2023 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	: DFO, Wildlife Ranchi vide letter no. 1059, dated 11.10.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Territorial	: Division Forest Officer, Lohardaga Forest Division vide letter no. 1756, dated 05.10.2023 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site
6	DSR	: This project is mentioned in approved District Survey Report (DSR) of Lohardaga District (Sl. no. 18, Page no. 26).
7	Gram Sabha	: BDO, Senha vide letter no. 1349, Dated 05.10.2023 informed that Gram Sabha conducted on 18.09.2023.
8	Mine Plan Approval	: Approved by DMO, Lohardaga vide Memo No. 1370/M, dated 28.11 2023.
9	Qualified Person	: Shri P.K. Sen was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	: Opencast Method, Manual
2	Quarry Area	: 5 years – 0.481 ha. Life of Mine – 12Year








3	Waste Generation	:	NA	Life of Mine – 12Year
4	Stripping Ratio	:	NA	
5	Working Days	:	200	
6	Bench: size & No	:	1m x 1m	
7	Elevation of Mine	:	Highest elevation: 708m AMSL Lowest elevation: 706m AMSL	
8	Ground Level Elevation		706 m AMSL to 708 m AMSL	
9	Ultimate Working Depth	:	2m	
10	Water Table	:	689m AMSL in Pre Monsoon to 697m AMSL in Post Monsoon	
11	Topography of Mine	:	Almost flat	
12	Explosive Requirement	:	Nil	
13	Diesel/Fuel requirement	:	Nil	

Production Details

Year	Production of Recoverable Soil Volume (in Cum)	Production of Brick Blocks (in nos.)
1 st	1600	8,00,000
2 nd	1600	8,00,000
3 rd	1600	8,00,000
4 th	1600	8,00,000
5 th	1600	8,00,000
Total	8000	40,00,000

Land Use:

Type of land use	Present Land Use (In Ha)	At the end of Plan Period (In Ha)	At the end of life of mines (In Ha)
Road	0.015	0	0
Quarry	0	0.481	1.099
Safety Zone	0	0.051	0.051
Total Area in used	0	0.532	1.150
Balance unused Area	1.135	0.618	0
Total Applied Area	1.150	1.150	1.150

Protection Measures for Post Mine Closure Action Plan

The mine site will be properly fenced properly. A board of Do Not Enter, Only Authorized Access will be fixed near the water reservoir area and at the gate of the mine site.








- A warning sign board will be erected at the site giving general information about the hazards at the site.
- The periphery of the water reservoir pit will be secured by constructing a parapet wall or gabion walls.
- Plantation is also proposed at the backfilled area along with around the benches.

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	LOCATION	Area (Ha.)	No. of Trees
1	Safety Zone	0.051	130
2	Approach road	0.006	20
	Total	0.057	150

- Gablon Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be used for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- All machinerles and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machinerles and vehicle under control. Records for same to be maintained.

- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha' road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask etc. shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Risk & Hazards Management

Risk Assessment

It is a small manual mining by tractor & haulage. No major risk is anticipated.

Some anticipated risks are briefed below;

Minor Injuries

In Course of project activities during excavation of soil and its loading into tractor. There might be some minor personal injury.

Road Accident

In course of haulage of soil to Brick kiln by tractor, road accident may happen.

Disaster Management Plan

1) Road Safety

Tractor driven will be instructed to ensure that speed of tractor on public road should be restricted to 15 KMPH.

Haulage road would be repaired & maintained regularly.

ii) An information centre would be maintained at office with telephone contact no. of local police station and hospital. In case of a road accident, police will be informed and arrangements would be made for medical aid to injured person.

iii) Arrangement for first aid to minor injuries to personnel working in the mine would be made in Temporary office.

Top Soil Management

During quarry development an amount of 2198 cum of fertile top-soil will be generated and this produced top-soil will be preserved temporarily by dumping. This preserved top-soil will be spread concurrently over the excavated part of the land after the end of each year production of brick soil and grass cultivation will be done on it.

BUDGET

PROJECT COST	Capital Cost (INR)	Recurring Cost (INR / Year)
Land	0.00	50,000.00
Tools & Equipment	50,000.00	0.00
Infrastructure & Other Statutory Clearance	4,00,000.00	0.00
EMP	45,000.00	3,07,500.00
Total	4,95,000.00	3,57,500.00

ENVIRONMENT MANAGEMENT PLAN (EMP)	Capital Cost (INR)	Recurring Cost (INR / Year)
Reclamation & Rehabilitation of Excavated Pit	--	50,000.00
Water Tanker for Dust Suppression	0.00	2,00,000.00
Plantation in Safety Zone	45,000.00	7,500.00
Compliance & Monitoring	0.00	50,000.00
TOTAL	45,000.00	3,07,500.00

Environment Monitoring Programme :

S. No.	Description	No. Monitoring Stations	Duration
1	Air	3 Stations	6 Monthly
2	Soil	1 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	3 Stations	6 Monthly

Organizational Structure:

Introduction

The Environmental Management Plan (EMP) Cell has been established to ensure environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. This project aims to minimize environmental harm, promote sustainable practices, ensure compliance with regulations, and foster community engagement and transparency. The EMP Cell will provide a framework for identifying, assessing, and mitigating potential environmental impacts associated with the mining activities.

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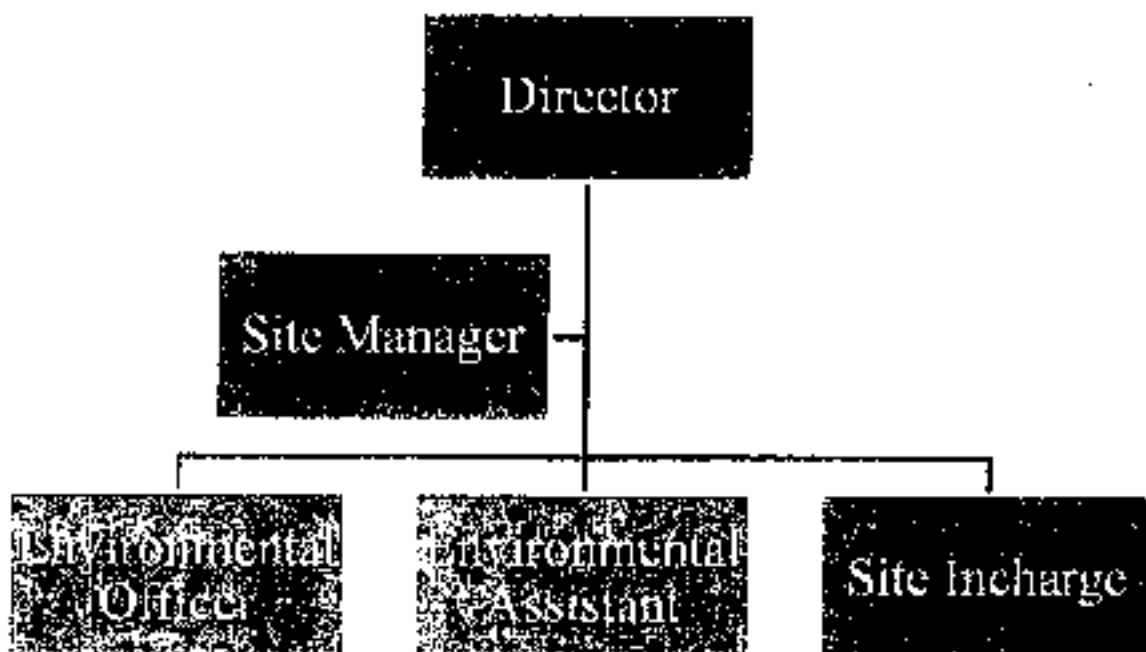
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EMP Cell structure

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Environmental Officer (EO)

- Develop, implement, and review EMP
- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide environmental training
- Manage environmental data collection
- Develop environmental policies
- Conduct site inspections
- Identify and mitigate environmental hazards
- Prepare quarterly reports

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- Assist in data analysis and reporting
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- Conduct site inspections
- Assist in preparing quarterly reports
- Update environmental records
- Assist in implementing mitigation measures
- Participate in training programs
- Provide support to EO

Administrative Assistant (AA)

- Maintain environmental records
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- Provide strategic direction
- Approve environmental policies
- Allocate resources
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- Ensure compliance
- Foster environmental responsibility
- Support employee training

- Review environmental investments
- Ensure integration of environmental considerations

EMP Process Flow

The EMP process flow includes:

1. Environmental Monitoring
2. Data Analysis
3. Report Submission
4. Review and Revision
5. Implementation
6. Compliance Check

Key Decision Points

Key decision points include:

1. Non-compliance: Corrective action and Reporting
2. Environmental incidents: Investigation, Mitigation, and Reporting

Documentation

Documentation includes:

- EMP manual
- Monitoring records
- Reports
- Inspection records
- Training records

Implementation Timeline

The implementation timeline consists of:

1. Pre-Operational Phase (1 month): Establish EMP
2. Operational Phase (Ongoing): Implement EMP
3. Closure and Rehabilitation Phase (6 months): Restore mined land

Reporting

The EMP Cell will submit quarterly reports to:

- Company Director
- Regulatory authorities

Conclusion

The EMP Cell is committed to ensuring environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. With a clear structure, roles, and responsibilities, the EMP Cell is equipped to manage environmental impacts and promote sustainable practices.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Brick Soil Mining for M/s Gulab Bricks, Village : Chandkopa, Thana : Senha, Thana no. : 145, Distt. : Lohardaga, Jharkhand (1.15 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MerLiFE Portal (<https://merlife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

3. Brick Soil Mining for M/s Kamal Brcks, Village : Badla, Thana : Senha, Thana no. : 148, Distt. : Lohardaga, Jharkhand (1.11 Ha).

(Proposal No : SIA/JH/MIN/ 470157/2024)

Name of the consultant :Crystal Consultants, Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 24.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Earthwork / Soil Mining (1200 Cum Per Annum for using of making of 6,00,000 Bricks Per Annum)

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Brick Soil Mining for M/s Kamal Bricks
2	Lessee:	: M/s Kamal Bricks Proprietor-Ramchandra Oraon
3	Lessee Address	: At-Budhu Lane, Nawaripara, District-Lohardaga, Jharkhand-835302
4	Lease Area	: 1.11 Ha. Acres: 2.74
5	Type of Land	: Non Forest – Rayatl Land
6	Project Cost	: Capital: 4.64 Lakhs Recurring: 3.38 Lakh / year
7	EMP Budget	: Capital: 0.48 Lakhs Recurring: 3.08 Lakh / year
8	CSR / CER Budget	: -
9	New or Expansion	: New Project
10	Mineable Reserves	: Cu.M.: 18414 cum Tonnes:
11	Mine Life	: 15 years

12	Man power	:	10
13	Water Requirement	:	Total 7.4 KLD Including Domestic (0.4 KLD), Dust Suppression (6.0 KLD) & Horticulture (1 KLD)
14	Water Source	:	From nearby villages/Nearest Canal by tankers
15	DG Set / power	:	0 KVA
16	Crusher	:	--
17	Nearest Water Body	:	South Koel River (4.05 km in South direction)
18	Nearest Habitation	:	Badla village (400m in NW direction)
19	Nearest Rail Station	:	Lohardaga Railway Station, 6.75 Km in North-East direction
20	Nearest Air Port	:	Birsa Munda Airport, Ranchi, 69.90 km in South-East direction
21	Nearest Forest	:	Nil
22	Road & Highways	:	National Highway – 143A is about 1.70 km in East direction

CO-ORDINATES

1	Latitude	N23°24'42.05"	TO N23°24'45.12"
2	Longitude	E84°39'10.02"	TO E84°39'16.83"

LAND DETAILS

Khata no.	Plot no.
27	1818 (P)

STATUTORY CLEARANCES

1	Lot / Lease docs	:	Land agreement made.
2	CO	:	The CO, Senha (Lohardaga) vide letter no. 896, dated 16.09.2023, has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyar.
3	DMO	:	DMO, Lohardaga vide memo no. 1172/M, dated 04.10.2023 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Ranchi vide letter no. 1028, dated 09.10.2023 certified that the proposed project site is outside Eco Sensitive

		Zone of Palkot Wildlife Sanctuary.
5	DFO Territorial	Division Forest Officer, Lohardaga Forest Division vide letter no. 1707, dated 26.09.2023 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site
6	DSR	This project is mentioned in approved District Survey Report (DSR) of Lohardaga District (Sl. no. 10, Page no. 25).
7	Gram Sabha	BDO, Senha vide letter no. 1346, Dated 05.10.2023 informed that Gram Sabha conducted on 24.09.2023.
8	Mine Plan Approval	Approved by DMO, Lohardaga vide Memo No. 1403/M, dated 02.12.2023.
9	Qualified Person	Shri P.K. Sen was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	: Opencast Method, Manual
2	Quarry Area	: 5 years – 0.359ha. Life of Mine – 15Year
3	Waste Generation	: NA Life of Mine – 15Year
4	Stripping Ratio	: NA
5	Working Days	: 200
6	Benchs: size & No	: 1m x 1m
7	Elevation of Mine	: Highest elevation: 680m AMSL Lowest elevation: 678m AMSL
8	Ground Level Elevation	: 678 m AMSL to 680 m AMSL
9	Ultimate Working Depth	: 2m
10	Water Table	: 661m AMSL in Pre Monsoon to 669m AMSL in Post Monsoon
11	Topography of Mine	: Almost flat
12	Explosive Requirement	: Nil
13	Diesel/Fuel requirement	: Nil

Production Details

Year	Production of Recoverable Soil Volume (in Cum)	Production of Brick Blocks (in nos.)
1 st	1200	6,00,000

2 nd	1200	6,00,000
3 rd	1200	6,00,000
4 th	1200	6,00,000
5 th	1200	6,00,000
Total	6000	30,00,000

Land Use:

Type of land use	Present Land Use (In Ha)	At the end of Plan Period (In Ha)	At the end of life of mines (In Ha)
Road	0.042	0.030	0
Quarry	0	0.359	1.062
Safety Zone	0	0.048	0.048
Total Area in used	0.042	0.437	1.110
Balance unused Area	1.068	0.673	0
Total Applied Area	1.110	1.110	1.110

Protection Measures for Post Mine Closure Action Plan

The mine site will be properly fenced properly. A board of Do Not Enter, Only Authorized Access will be fixed near the water reservoir area and at the gate of the mine site.

- A warning sign board will be erected at the site giving general information about the hazards at the site.
- The periphery of the water reservoir pit will be secured by constructing a parapet wall or gabion walls.
- Plantation is also proposed at the backfilled area along with around the benches.

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	LOCATION	Area (Ha.)	No. of Trees
1	Safety Zone	0.048	120
2	Approach road	0.012	40
	Total	0.060	160

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development,

Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be used for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha' road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask etc. shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.

- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Risk & Hazards Management

Risk Assessment

It is a small manual mining by tractor & haulage. No major risk is anticipated.

Some anticipated risks are briefed below;

Minor Injuries

In Course of project activities during excavation of soil and its loading into tractor. There might be some minor personal injury.

Road Accident

In course of haulage of soil to Brick kiln by tractor, road accident may happen.

Disaster Management Plan

i) Road Safety

Tractor driven will be instructed to ensure that speed of tractor on public road should be restricted to 15 KMPH.

Haulage road would be repaired & maintained regularly.

ii) An information centre would be maintained at office with telephone contact no. of local police station and hospital. In case of a road accident, police will be informed and arrangements would be made for medical aid to injured person.

iii) Arrangement for first aid to minor injuries to personnel working in the mine would be made in Temporary office.

Top Soil Management

During quarry development an amount of 2124 cum of fertile top-soil will be generated and this produced top-soil will be preserved temporarily by dumping. This preserved top-soil will be spread concurrently over the excavated part of the land after the end of each year production of brick soil and grass cultivation will be done on it.

BUDGET

PROJECT COST	Capital Cost (INR)	Recurring Cost (INR / Year)
Land	0.00	30,000.00
Tools & Equipment	50,000.00	0.00

Infrastructure & Other Statutory Clearance	4,00,000.00	0.00
EMP	48,000.00	3,08,000.00
Total	4,64,100.00	3,38,000.00

ENVIRONMENT MANAGEMENT PLAN (EMP)	Capital Cost (INR)	Recurring Cost (INR / Year)
Reclamation & Rehabilitation of Excavated Pit	--	50,000.00
Water Tanker for Dust Suppression	0.00	2,00,000.00
Plantation in Safety Zone	48,000.00	8,000.00
Compliance & Monitoring	0.00	50,000.00
TOTAL	48,000.00	3,08,000.00

Environment Monitoring Programme :

S. No.	Description	No. Monitoring Stations	Duration
1	Air	3 Stations	6 Monthly
2	Soil	1 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	3 Stations	6 Monthly

Organizational Structure:

Introduction

The Environmental Management Plan (EMP) Cell has been established to ensure environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. This project aims to minimize environmental harm, promote sustainable practices, ensure compliance with regulations, and foster community engagement and transparency. The EMP Cell will provide a framework for identifying, assessing, and mitigating potential environmental impacts associated with the mining activities.

Environmental Policy

Our company is committed to:

- Minimizing environmental harm through responsible mining practices
- Promoting sustainable practices to conserve natural resources
- Ensuring compliance with regulatory requirements and industry standards
- Fostering community engagement and transparency through open communication

EMP Cell Objectives

The EMP Cell objectives are:

- Minimize environmental impacts on air, water, soil, and biodiversity
- Ensure compliance with regulatory requirements and industry standards
- Promote sustainable practices through efficient resource utilization

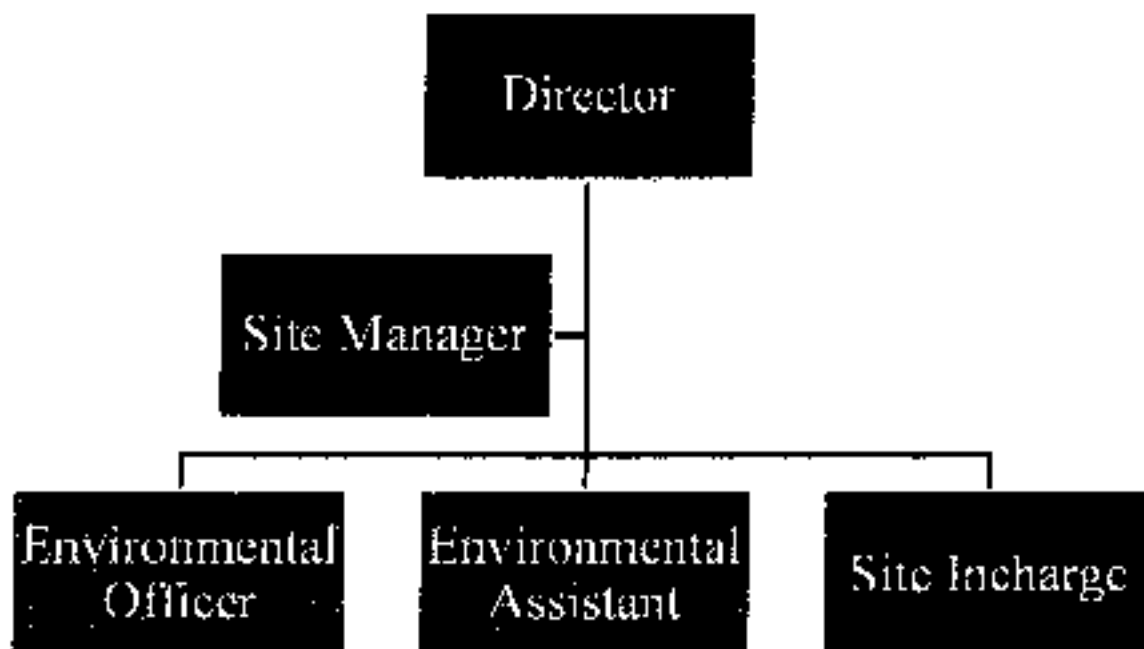
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- Enhance community engagement and transparency through regular updates

EMP Cell Structure

The EMP Cell consists of three members:

- Environmental Officer (EO) as Team Lead, responsible for overall strategy
- Environmental Assistant (EA) for Monitoring and Reporting, focusing on data collection
- Administrative Assistant (AA) for Documentation and Coordination, handling administrative tasks



EMP Cell structure

Roles and Responsibilities

Environmental Officer (EO)

- Develop, implement, and review EMP
- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide environmental training
- Manage environmental data collection
- Develop environmental policies
- Conduct site inspections
- Identify and mitigate environmental hazards
- Prepare quarterly reports

Environmental Assistant (EA)

- Conduct field monitoring
- Collect and record environmental data
- Assist in data analysis and reporting
- Maintain monitoring equipment
- Conduct site inspections

- Assist in preparing quarterly reports
- Update environmental records
- Assist in implementing mitigation measures
- Participate in training programs
- Provide support to EO

Administrative Assistant (AA)

- Maintain environmental records
- Coordinate documentation
- Assist in preparing quarterly reports
- Manage environmental documentation
- Provide administrative support
- Coordinate training logistics
- Maintain communication with regulatory authorities
- Assist in updating policies
- Manage environmental budget
- Provide general administrative support

Director/Top Management Responsibilities

- Provide strategic direction
- Approve environmental policies
- Allocate resources
- Review quarterly reports
- Ensure compliance
- Foster environmental responsibility
- Support employee training
- Review environmental investments
- Ensure integration of environmental considerations

EMP Process Flow

The EMP process flow includes:

1. Environmental Monitoring
2. Data Analysis
3. Report Submission
4. Review and Revision
5. Implementation
6. Compliance Check

Key Decision Points

Key decision points include:

1. Non-compliance: Corrective action and Reporting
2. Environmental incidents: Investigation, Mitigation, and Reporting

Documentation

Documentation includes:

- EMP manual
- Monitoring records
- Reports
- Inspection records
- Training records

Implementation Timeline

The implementation timeline consists of:

1. Pre-Operational Phase (1 month): Establish EMP
2. Operational Phase (Ongoing): Implement EMP
3. Closure and Rehabilitation Phase (6 months): Restore mined land

Reporting

The EMP Cell will submit quarterly reports to:

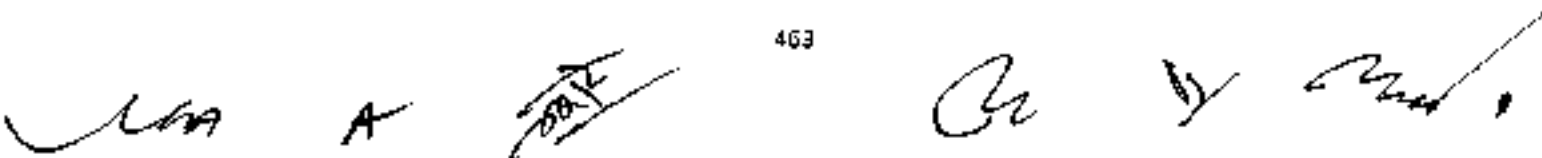
- Company Director
- Regulatory authorities

Conclusion

The EMP Cell is committed to ensuring environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. With a clear structure, roles, and responsibilities, the EMP Cell is equipped to manage environmental impacts and promote sustainable practices.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Brick Soil Mining for M/s Kamal Bricks, Village : Badla, Thana : Senha, Thana no. : 148, Distt. : Lohardaga, Jharkhand (1.11 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA,III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.



4. Brick Soil Mining for M/s Bharat Bricks, Village : Senha, Thana : Senha, Thana no. : 189, Distt. : Lohardaga, Jharkhand (0.356 Ha).

(Proposal No : SIA/JH/MIN/ 502111/2024)

Name of the consultant :Crystal Consultants, Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 24.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 1500 cum soil/Season or 6,00,000 Bricks/Season.

Project and Location Details:

Sl	Parameter	Details
1.	Project Name	: Brick Soil Mining Deposit of M/s Bharat Bricks
2.	Lessee:	: M/s Bharat Bricks Prop. -Sri Madan Kumar Gupta S/O- Sri Rajendra Prasad
3.	Lease Address	: Village : Senha, Thana : Senha, Distt.: Lohardaga, Jharkhand (0.356 Ha)
4.	Lease Area	: 0.356 ha Acres-0.88 Acres
5.	Type of Land	: Non Forest – Raiyati Land
6.	Project Cost	: Rs. 40 Lakhs
7.	EMP Budget	: Capital:8.59 Lakh Recurring: 3.82Lakh / year
8.	New or Expansion	: New
9.	Mineable Reserves	: Cum.: 5878 cum Tonnes:
10.	Mine Life	: 3.9 Years
11.	Man power	: 15
12.	Water Requirement	: 2.9 KLD (Drinking: 0.4 KLD, Dust Suppression: 1.5 KLD, Plantation: 1.0 KLD)
13.	Water Source	: From authorised hired tanker
14.	DG Set /power	: -
15.	Crusher	: No crusher
16.	Nearest Water Body	: Phuljhar Nala 1.5 Km towards South direction.
17.	Nearest Habitation	: Lohardaga Approx. 10.0 km towards North direction.
18.	Nearest Rail Station	: Lohardaga Railway Station at a distance of 10.00 km towards North direction from site.
19.	Nearest Airport	: Birsa Munda Airport, at a distance of 75 km in East direction from mine site.

20.	Nearest Forest	:	Open Mixed Jungle Approx. 2.50 Km towards SE direction Protected forest, Approx. 2.30 Km towards NE direction
21.	Road & Highways	:	NH-143A, Approx. 0.68 km towards SE direction.

CO-ORDINATES

1	Latitude		From N23°22'51.19"	To N23°22'48.52"
2	Longitude		From E84°38'09.87"	To E84°38'8.97"

LAND DETAILS

Khata no.	Plot no.
861	3681

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Land agreement made.
2	CO	:	The CO, Senha (Lohardaga) vide letter no. 897, dated 16.09.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatyan & Register II.
3	DMO	:	DMO, Lohardaga vide memo no. 09/M, dated 04.01.2024 certified that no other mining lease area exists within 500 meter radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Ranchi vide letter no. 1102, dated 18.10.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Lohardaga Forest Division vide letter no. 1824, dated 13.10.2023 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved District Survey Report (DSR) of Lohardaga District (Sl. no. 03, Page no. 25).
7	Gram Sabha	:	BDO, Senha vide letter no. 1386, Dated 12.10.2023 informed that Gram Sabha conducted on 13.09.2023.
8	Mine Plan	:	Approved by DMO, Lohardaga vide Memo No. 745/M, dated

	Approval	07.10.2024.
9	Qualified Person	: Shri Surendra Sai was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Manual Mining method	
2	Quarry Area	:	0.356 ha	Life of Mine – 3.9 Years
3	Waste Generation	:	0.0cu.m	
4	Stripping Ratio	:	0: 0	
5	Working Days	:	200	
6	Benchs: size & No	:	--	
7	Elevation of Mine	:	653 m AMSL	
8	Ground Level Elevation	:	--	
9	Ultimate Working Depth	:	651 m AMSL	
10	Water Table	:	645 m AMSL	
11	Topography of Mine	:	Area represents flat topography	
12	Explosive Requirement	:	--	
13	Diesel/Fuel requirement	:	--	

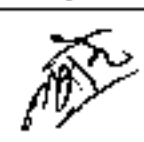
Production Details

Year	Production In Cum	Nos. of Bricks in Lac
1 st	1500.00	600000.00
2 nd	1500.00	600000.00
3 rd	1500.00	600000.00
Total	4500.00	1800000.00

Land Use

Pattern of Utilization	Existing (Ha)	At the end of Plan period (ha.)
Mining/Quarrying	Nil	0.250
Storage of casted bricks	Nil	Comes under excavation
Plantation at safety Zone	Nil	0.029








Road	0.03	0.00
Total used Area	Nil	0.077
Unused Area	-	0.356

ENVIRONMENT MANAGEMENT

Green Belt Development

S.No.	LOCATION	Area/Length	No of Trees
1	Safety Zone	0.029Ha	47

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.
 - Solid Waste Management**
 - There is no generation of waste.
 - Environment Management Plan**

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring	-	50,000.00
3	Plantation	14,100.00	2350.00
4	Reclamation and Rehabilitation of Excavated pit		50,000.00
TOTAL		14,100.00	3,02,350.00

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.

- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccharoad' shall be done.

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- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice.
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSOCIATED WITH PROJECT ACTIVITIES AND THEIR MITIGATION MEASURES ARE DISCUSSED BELOW:

Road accidents

Transportation of sand along the public road may cause accident which may cause injury.

Preventive Measures;

1. Ensure speed limit for the haulage vehicle for 40 KMPH.
2. Regular maintenance of haulage road
3. Appropriate navigational signs informing sensitive area like school and habitation
4. Regular maintenance of the vehicles.

Dust generation

- No drilling involved
- Dust mass would be supplied to workers.
- Regular sprinkling of water on road

Noise Generation

Source of noise pollution in the project would be movement of tippers / tractors transporting sand from mine to stock yard. In general tippers / tractors produce a noise level of 75 - 90 (A) measured at distance of 3m from the source.

Preventive measures

- Transportation activities would be confined during day time only.
- There would be a speed limit of 40 kmph for tippers. Higher is speed higher is noise.
- Regular repair and maintenance of tippers/tractors.
- Plantation on both sides of haulage road.
- Tippers having PUC certified will be allowed to be used for sand transportation.

Health Hazards

During digging and handling of sand i.e. loading, transportation and unloading of sand, workmen would be exposed to inhalation of fine dust particles. This poses a health hazard.

Measures

Following mitigation measures would be taken to minimize this impact on health

- Regular water sprinkling on haulage roads
- Tree plantation on both sides of haulage road
- Tippers / Tractors carrying sand would be covered
- Mask would be provided to workmen employed for digging, loading, transportation and unloading activities

Accident at Site

This is a project with only source of accident at site would be movement of tippers /tractors within mine site for transportation of sand.

Preventive measures

Following mitigation measures would be taken to minimize risk of road accident:

- Separate alignment for movement of loaded vehicles coming out of mine site

- Ensure speed restriction of 10 KMPH within mine site for incoming and outgoing tippers
- Regular maintenance and repair of haulage vehicles employed for sand transportation
- No overtaking of transportation vehicles within mine site
- Proper maintenance of haulage roads

Transportation

The usual method of transporting minerals from the working face is by tractor. Large earth moving equipment's are not used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road/approach road shall be made smooth regularly with a road roller.
- Mine road/approach road will be cleaned daily for smooth transportation.
- Mine road/approach road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Environment Monitoring Programme :

S. No.	Description	No. Monitoring Stations	Duration
1	Air	3 Stations	6 Monthly
2	Soil	1 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	3 Stations	6 Monthly

Organizational Structure:

Introduction

The Environmental Management Plan (EMP) Cell has been established to ensure environmental sustainability and compliance with regulatory requirements for the Stone

Mining Project. This project aims to minimize environmental harm, promote sustainable practices, ensure compliance with regulations, and foster community engagement and transparency. The EMP Cell will provide a framework for identifying, assessing, and mitigating potential environmental impacts associated with the mining activities.

Environmental Policy

Our company is committed to:

- Minimizing environmental harm through responsible mining practices
- Promoting sustainable practices to conserve natural resources
- Ensuring compliance with regulatory requirements and industry standards
- Fostering community engagement and transparency through open communication

EMP Cell Objectives

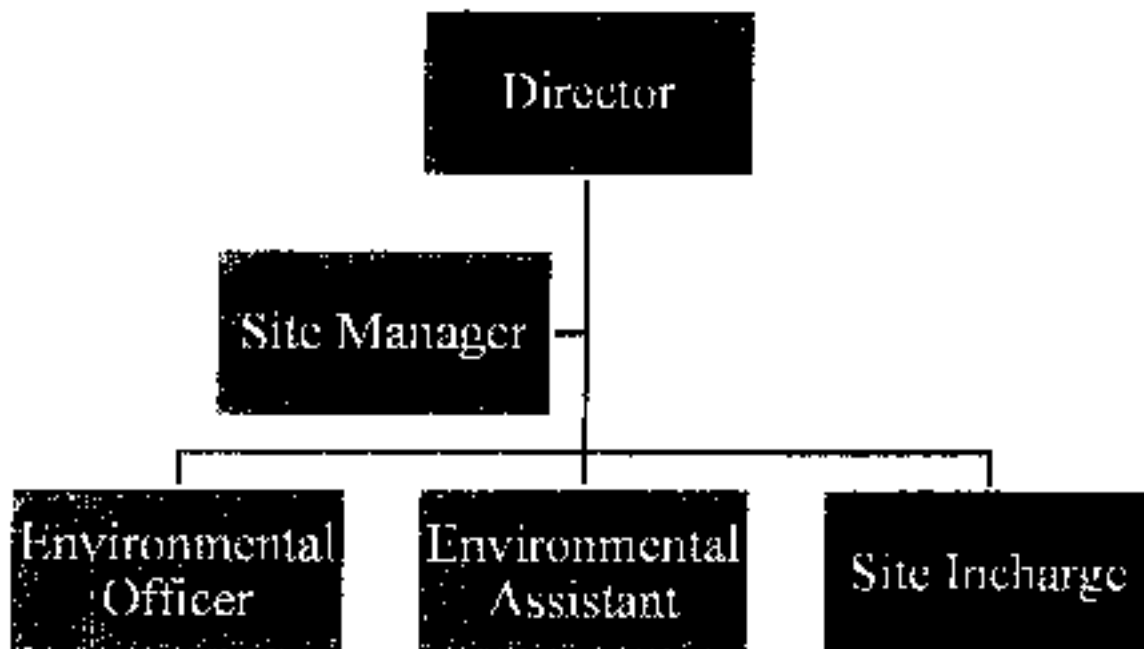
The EMP Cell objectives are:

- Minimize environmental impacts on air, water, soil, and biodiversity
- Ensure compliance with regulatory requirements and industry standards
- Promote sustainable practices through efficient resource utilization
- Enhance community engagement and transparency through regular updates

EMP Cell Structure

The EMP Cell consists of three members:

- Environmental Officer (EO) as Team Lead, responsible for overall strategy
- Environmental Assistant (EA) for Monitoring and Reporting, focusing on data collection
- Administrative Assistant (AA) for Documentation and Coordination, handling administrative tasks



EMP Cell structure

Roles and Responsibilities

Environmental Officer (EO)

- Develop, implement, and review EMP

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- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide environmental training
- Manage environmental data collection
- Develop environmental policies
- Conduct site inspections
- Identify and mitigate environmental hazards
- Prepare quarterly reports

Environmental Assistant (EA)

- Conduct field monitoring
- Collect and record environmental data
- Assist in data analysis and reporting
- Maintain monitoring equipment
- Conduct site inspections
- Assist in preparing quarterly reports
- Update environmental records
- Assist in implementing mitigation measures
- Participate in training programs
- Provide support to EO

Administrative Assistant (AA)

- Maintain environmental records
- Coordinate documentation
- Assist in preparing quarterly reports
- Manage environmental documentation
- Provide administrative support
- Coordinate training logistics
- Maintain communication with regulatory authorities
- Assist in updating policies
- Manage environmental budget
- Provide general administrative support

Director/Top Management Responsibilities

- Provide strategic direction
- Approve environmental policies
- Allocate resources
- Review quarterly reports
- Ensure compliance
- Foster environmental responsibility
- Support employee training
- Review environmental investments
- Ensure integration of environmental considerations

EMP Process Flow

The EMP process flow includes:

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1. Environmental Monitoring
2. Data Analysis
3. Report Submission
4. Review and Revision
5. Implementation
6. Compliance Check

Key Decision Points

Key decision points include:

1. Non-compliance: Corrective action and Reporting
2. Environmental Incidents: Investigation, Mitigation, and Reporting

Documentation

Documentation includes:

- EMP manual
- Monitoring records
- Reports
- Inspection records
- Training records

Implementation Timeline

The implementation timeline consists of:

1. Pre-Operational Phase (1 month): Establish EMP
2. Operational Phase (Ongoing): Implement EMP
3. Closure and Rehabilitation Phase (6 months): Restore mined land

Reporting

The EMP Cell will submit quarterly reports to:

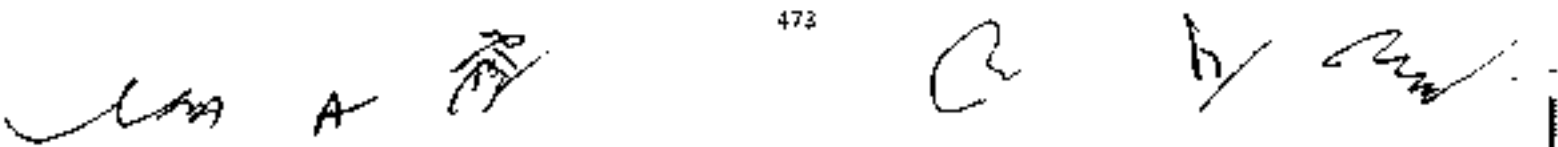
- Company Director
- Regulatory authorities

Conclusion

The EMP Cell is committed to ensuring environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. With a clear structure, roles, and responsibilities, the EMP Cell is equipped to manage environmental impacts and promote sustainable practices.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Brick Soil Mining for M/s Bharat Bricks, Village : Senha, Thana : Senha, Thana no. : 189, Distt. : Lohardaga, Jharkhand (0.356 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

1. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).



- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

5. Chirapathar Stone Deposit of M/s Rudra Minerals (Prop. : Shri Amar Mandal), Village : Chirapathar, Tehsil : Shikarpara, Distt.: Dumka, Jharkhand (1.481 Ha).

(Proposal no.: SIA/JH/MIN/502093/2024)

Name of the consultant :Crystal Consultants, Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 24.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity – 109499.85 TPA/ 40555.50 Cum/Year

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Chirapathar Stone Deposit
2	Lessee:	M/s Rudra Minerals, Proprietor – Sri Amar Mandal
3	Lessee Address	Village – Sejakoda, P.O – Jama, P.S – Jama, District – Dumka, Jharkhand
4	Lease Area	1.481 Ha Acres- 3.66 Acre
5	Type of Land	Non Forest Raiyati Land
6	Project Cost	Rs 14.577 Lakhs
7	EMP Budget	Capital: 4.577 Lakhs Recurring: 3.1295 / year
8	New or Expansion	New
9	Mineable Reserves	cum.: 198715.30 cum Tonnes: 536531.31 tonnes
10	Mine Life	5 years
11	Man power	16
12	Water Requirement	8.52 KLD (Drinking: 0.64 KLD, Industrial:4.44 KLD, Plantation: 3.44 KLD)
13	Water Source	By authorised hired water tankers
14	DG Set / power	-
15	Crusher	No crusher

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16	Nearest Water Body	:	Brahmani river is situated at a distance of 7.2 km in north direction.
17	Nearest Habitation	:	Sikaripara, at 17.5 Km in West direction.
18	Nearest Rail Station	:	Pinargaria Railway station, approx. 3.2 km towards North direction
19	Nearest Air Port	:	Deoghar Airport, approx. 98 km
20	Nearest Forest	:	Kusumghati PF (3 Km), Kauwamahat PF (3.5 Km), Majhladih PF (2 Km), Daldali PF (3 Km)
21	Road & Highways	:	NH – 114A, Approx. 2.65 km in North direction

CO-ORDINATES

S. No.	Latitude	Longitude	S. No.	Latitude	Longitude
1	24° 11' 2.890" N	87° 37' 33.657" E	29	24° 11' 2.702" N	87° 37' 37.213" E
2	24° 11' 3.921" N	87° 37' 34.277" E	30	24° 11' 2.893" N	87° 37' 36.951" E
3	24° 11' 4.553" N	87° 37' 34.553" E	31	24° 11' 2.545" N	87° 37' 36.743" E
4	24° 11' 4.754" N	87° 37' 35.116" E	32	24° 11' 2.627" N	87° 37' 36.589" E
5	24° 11' 4.663" N	87° 37' 35.561" E	33	24° 11' 2.458" N	87° 37' 36.487" E
6	24° 11' 4.727" N	87° 37' 35.732" E	34	24° 11' 2.356" N	87° 37' 36.682" E
7	24° 11' 4.768" N	87° 37' 35.650" E	35	24° 11' 1.811" N	87° 37' 36.435" E
8	24° 11' 5.273" N	87° 37' 35.956" E	36	24° 11' 1.760" N	87° 37' 36.318" E
9	24° 11' 5.912" N	87° 37' 36.205" E	37	24° 11' 1.234" N	87° 37' 36.182" E
10	24° 11' 6.276" N	87° 37' 36.497" E	38	24° 11' 1.364" N	87° 37' 37.397" E
11	24° 11' 6.096" N	87° 37' 37.050" E	39	24° 11' 1.802" N	87° 37' 37.594" E
12	24° 11' 5.920" N	87° 37' 37.713" E	40	24° 11' 1.678" N	87° 37' 38.070" E
13	24° 11' 5.130" N	87° 37' 37.720" E	41	24° 11' 1.378" N	87° 37' 38.579" E
14	24° 11' 5.002" N	87° 37' 37.915" E	42	24° 11' 0.960" N	87° 37' 38.558" E
15	24° 11' 4.833" N	87° 37' 37.810" E	43	24° 11' 0.727" N	87° 37' 37.919" E
16	24° 11' 4.796" N	87° 37' 37.640" E	44	24° 11' 0.469" N	87° 37' 37.388" E
17	24° 11' 4.331" N	87° 37' 37.408" E	45	24° 11' 0.103" N	87° 37' 37.561" E
18	24° 11' 4.316" N	87° 37' 37.255" E	46	24° 10' 59.934" N	87° 37' 37.501" E

19	24° 11' 3.772" N	87° 37' 36.919" E	47	24° 11' 0.129" N	87° 37' 36.450" E
20	24° 11' 3.411" N	87° 37' 37.544" E	48	24° 11' 0.283" N	87° 37' 35.809" E
21	24° 11' 3.340" N	87° 37' 37.886" E	49	24° 11' 0.391" N	87° 37' 35.251" E
22	24° 11' 3.215" N	87° 37' 37.909" E	50	24° 11' 0.471" N	87° 37' 34.705" E
23	24° 11' 2.988" N	87° 37' 37.768" E	51	24° 11' 0.756" N	87° 37' 34.528" E
24	24° 11' 2.620" N	87° 37' 38.169" E	52	24° 11' 1.181" N	87° 37' 34.674" E
25	24° 11' 2.513" N	87° 37' 38.444" E	53	24° 11' 1.465" N	87° 37' 34.217" E
26	24° 11' 2.246" N	87° 37' 38.332" E	54	24° 11' 1.915" N	87° 37' 33.698" E
27	24° 11' 2.108" N	87° 37' 37.739" E	55	24° 11' 2.942" N	87° 37' 34.256" E
28	24° 11' 2.370" N	87° 37' 37.404" E			

LAND DETAILS:

Khata No.	Plot No.
22	425(P)
5	433, 434, 438, 439, 440 (P)
9	428, 436
8	426
15	445
16	484, 485
17	441(P), 442(P)
14	437, 435
20	481, 482, 483

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LOI) has been issued by District Mining Officer, Dumka vide letter no. 725/M, dated 27.06.2024.
2	CO	:	The CO, Shikaripara vide letter no. 28/Ra., dated 11.01.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyar & Register II
3	DMO	:	DMO, Dumka vide memo no. 468/M, dated 31.03.2023 certified that no other mining lease area exists within 500 meters radius from proposed project site.

4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 484, dated 04.03.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Dumka Forest Division vide letter no. 336, dated 04.02.2023 certified that the distance of reserved / protected forest is more than 750 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Dumka District (Sl. no. 10, Page no. 150).
7	Gram Sabha	:	Gram Sabha conducted on 12.10.2022.
8	Mine Plan Approval	:	Approved by District Mining Officer, Dumka vide Letter No. 1060/M, dated 13.09.2024.
9	Qualified Person	:	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him

Working Details

1	Mining Method	:	Opencast other than fully mechanized (OTFM) Method	
2	Quarry Area	:	1.481 Ha / 3.66 Acres	Life of Mine – 5 years
3	Waste Generation	:	32699.05 cum	
4	Stripping Ratio	:	1:0.12	
5	Working Days	:	300	
6	Bench: size & No	:	6m to 6m	
7	Elevation of Mine	:	76 m AMSL to 72.5 m AMSL	
8	Ground level Elevation	:	76 m AMSL to 72.5 m AMSL	
9	Ultimate Working Depth	:	50 m AMSL	
10	Water Table	:	40 m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	17.12 kg/day	
13	Diesel/Fuel requirement	:	400 litre/day	

Production Details

Year	Production of Stone in Cum	Production of Stone in Tonnes	Overburden in cum	Intercalated waste in Cum	Total Waste in Cum
1st	39102.00	105575.40	5824.00	2028.00	7852.00

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2nd	39368.00	106293.60	0.00	2072.00	2072.00
3rd	39732.80	107278.56	4680.00	2091.20	6771.20
4th	39957.00	107883.90	0.00	2103.00	2103.00
5th	40555.50	109499.85	2852.00	2134.00	4986.50
Total	198715.30	536531.31	13356.00	10428.70	23784.70

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	Conceptual stage (Ha) (after life of mine)
Excavation	0.093	0.986	0.986 (0.093 Ha area shall be backfilled, 0.523 Ha area shall be converted water reservoir and 0.373 Ha shall be left as dead benches).
Waste Dump	0.00	0.00 (waste dump to be removed and backfilled)	Nil (waste dump to be removed and backfilled)
Road	0.004	0.00 (Comes under quarry)	0.00
Infrastructure (Crusher)	0.0	0.00	0.00
Safety Zone	0.0	0.495	0.495
Total Area in Use	0.097	1.481	1.481
Unused Area	1.384	0.00	0.00
Total Applied Area	1.481	1.481	1.481

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Place of Plantation	Spacing b/w plants	Total No. of Plants	Area Cover in Square Meters	Total Area in Ha.	Species
1st	Safety Zone	2.5 x 2.5	734	4590	0.459	Gulmohar, Gular, Sagwan, Sakua <u>Fruit Bearing Trees</u> Mango, Jackfruit.
	Haul Road	3 x 3	125	780	0.078	
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care &	---	---	---	---	

	Protection				Guava
Total			1379	5370	0.537

- ♦ Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Budget

PROPOSED FOR ENVIRONMENT MANAGEMENT COST			
S.NO.	Mitigative measures to protect Environment	Capital Cost (in Lakh)	Recurring cost (in Lakh)
01.	Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine)	0.00	2.00
02.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @ No. of plants 1966 x 500Rs.	2.577	0.4295
03.	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	Nil	0.50
TOTAL		2.577	2.4295

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx in the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity,	2 station	Six Monthly

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- The Boundary Pillars of the proposed mine lease area will be maintained properly.
- One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained
- If any tree felling than necessary permission shall be taken from the competent authority.
- Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Solid Waste Management

During first, second, third and fourth year gritty soil & intercalated waste will be removed (18798 m³) this soil and waste will be temporarily backfill within the exhausted quarry and in fifth year (4986.50 m³) removed gritty soil, intercalated waste and existing temporary backfill soil will be backfilled within the lower bench of the exhausted quarry.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.

- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced
- Optimum quantity of explosives would be used.
- Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on Gaur road by using water Tankers.
- ✓ Regular repair of Haul road
- ✓ All Trucks carrying stone outside lease area will have PUC certificate

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method;

Hazard identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5

5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or

maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonators shall not be carried in the same container.

- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.

- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operation.
- Only trained drivers will be hired.

Organizational Structure:

Introduction

The Environmental Management Plan (EMP) Cell has been established to ensure environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. This project aims to minimize environmental harm, promote sustainable practices, ensure compliance with regulations, and foster community engagement and transparency. The EMP Cell will provide a framework for identifying, assessing, and mitigating potential environmental impacts associated with the mining activities.

Environmental Policy

Our company is committed to:

- Minimizing environmental harm through responsible mining practices
- Promoting sustainable practices to conserve natural resources
- Ensuring compliance with regulatory requirements and industry standards
- Fostering community engagement and transparency through open communication

EMP Cell Objectives

The EMP Cell objectives are:

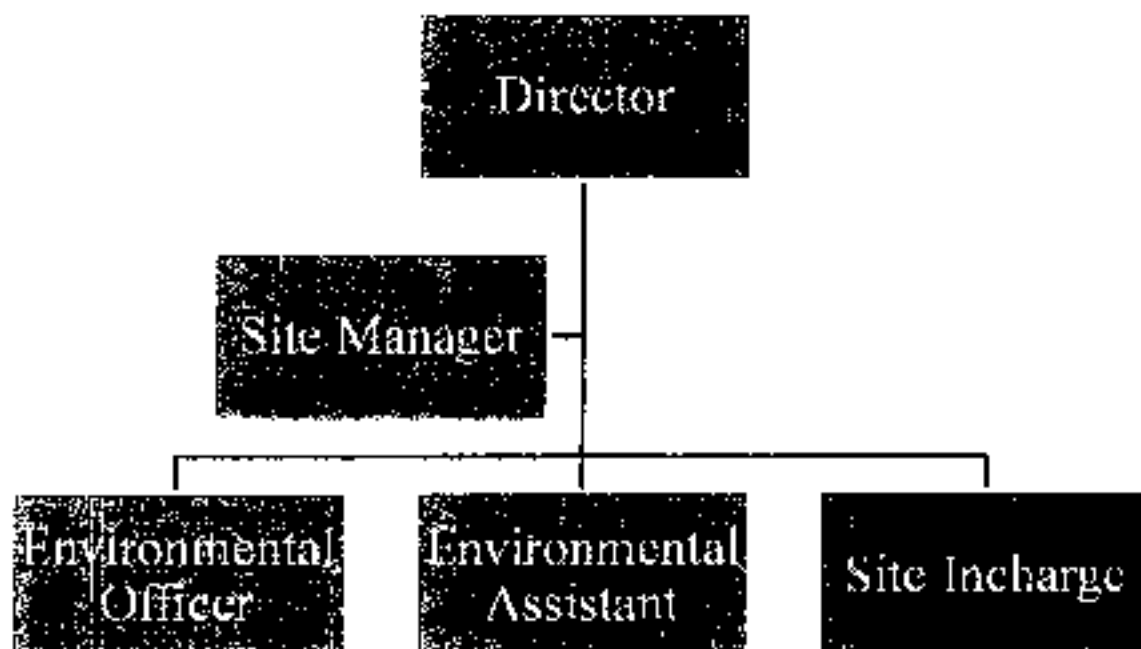
- Minimize environmental impacts on air, water, soil, and biodiversity
- Ensure compliance with regulatory requirements and industry standards
- Promote sustainable practices through efficient resource utilization
- Enhance community engagement and transparency through regular updates

EMP Cell Structure

The EMP Cell consists of three members:

- Environmental Officer (EO) as Team Lead, responsible for overall strategy
- Environmental Assistant (EA) for Monitoring and Reporting, focusing on data collection
- Administrative Assistant (AA) for Documentation and Coordination, handling administrative tasks

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EMP Cell structure

Roles and Responsibilities

Environmental Officer (EO)

- Develop, Implement, and review EMP
- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide environmental training
- Manage environmental data collection
- Develop environmental policies
- Conduct site inspections
- Identify and mitigate environmental hazards
- Prepare quarterly reports

Environmental Assistant (EA)

- Conduct field monitoring
- Collect and record environmental data
- Assist in data analysis and reporting
- Maintain monitoring equipment
- Conduct site inspections
- Assist in preparing quarterly reports
- Update environmental records
- Assist in implementing mitigation measures
- Participate in training programs
- Provide support to EO

Administrative Assistant (AA)

- Maintain environmental records
- Coordinate documentation

- Assist in preparing quarterly reports
- Manage environmental documentation
- Provide administrative support
- Coordinate training logistics
- Maintain communication with regulatory authorities
- Assist in updating policies
- Manage environmental budget
- Provide general administrative support

Director/Top Management Responsibilities

- Provide strategic direction
- Approve environmental policies
- Allocate resources
- Review quarterly reports
- Ensure compliance
- Foster environmental responsibility
- Support employee training
- Review environmental investments
- Ensure integration of environmental considerations

EMP Process Flow

The EMP process flow includes:

1. Environmental Monitoring
2. Data Analysis
3. Report Submission
4. Review and Revision
5. Implementation
6. Compliance Check

Key Decision Points

Key decision points include:

1. Non-compliance: Corrective action and Reporting
2. Environmental incidents: Investigation, Mitigation, and Reporting

Documentation

Documentation includes:

- EMP manual
- Monitoring records
- Reports
- Inspection records
- Training records

Implementation Timeline

The implementation timeline consists of:

1. Pre-Operational Phase (1 month): Establish EMP
2. Operational Phase (Ongoing): Implement EMP
3. Closure and Rehabilitation Phase (6 months): Restore mined land

Reporting

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The EMP Cell will submit quarterly reports to:

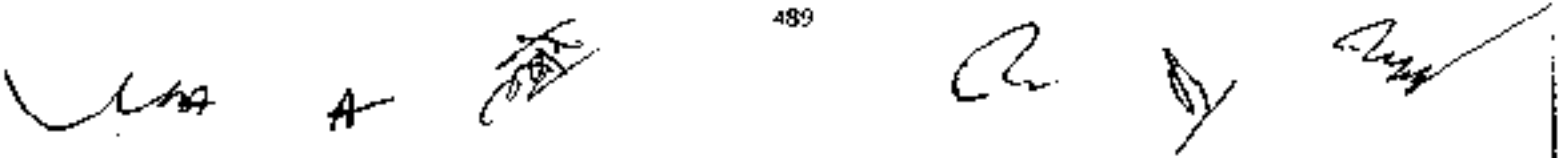
- Company Director
- Regulatory authorities

Conclusion

The EMP Cell is committed to ensuring environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. With a clear structure, roles, and responsibilities, the EMP Cell is equipped to manage environmental impacts and promote sustainable practices.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Chirapathar Stone Deposit of M/s Rudra Minerals (Prop. : Shri Amar Mandal), Village : Chirapathar, Tehsil : Shikaripara, Distt.: Dumka, Jharkhand (1.481 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).
- II The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VI Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.



6. Chirapathar Stone Deposit-1 of M/s Rudra Minerals (Prop. : Shri Amar Mandal), Village : Chirapathar, Tehsil : Shikaripara, Distt.: Dumka, Jharkhand (1.886 Ha).

(Proposal no.: SIA/JH/MIN/502085/2024)

Name of the consultant :Crystal Consultants, Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 24.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity – 139664.25 TPA/ 51727.50 Cum/Year

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Chirapathar Stone Deposit - 1
2	Lessee:	M/s Rudra Minerals, Proprietor – Sri Amar Mandal
3	Lessee Address	Village – Sejakoda, P.O – Jama, P.S – Jama, District – Dumka, Jharkhand
4	Lease Area	1.886 Ha Acres: 4.66 Acre
5	Type of Land	Non Forest Rariyat Land
6	Project Cost	Rs 15.264 Lakhs
7	EMP Budget	Capital: 5.264 Lakhs Recurring: 3.244 lakhs / year
8	New or Expansion	New
9	Mineable Reserves	cum.: 252804.50cum Tonnes: 682572.15 tonnes
10	Mine Life	5 years
11	Man power	18
12	Water Requirement	10.72 KLD (Drinking: 0.72 KLD, Industrial: 5.65 KLD, Plantation: 4.35 KLD)
13	Water Source	By authorised hired water tankers
14	DG Set / power	-
15	Crusher	No crusher
16	Nearest Water Body	Brahmani river is situated at a distance of 8.2 km in north direction.
17	Nearest Habitation	Sikaripara, at 17.5 KM in South-West direction.
18	Nearest Rail Station	Pinargaria Railway station, approx. 3.7 km towards North direction
19	Nearest Air Port	Deoghar Airport, approx. 98 km in West direction
20	Nearest Forest	Kusumghati PF (3 Km), Kauwamahar PF (3.5 Km), Majhladih PF (2 Km), Daldah PF (3 Km)

21	Road & Highways	:	NH – 114A, Approx. 2.8 km in North direction

CO-ORDINATES

S. No.	Latitude	Longitude	S. No.	Latitude	Longitude
1	24°11' 9.984" N	87°37' 40.412" E	18	24°11' 2.535" N	87°37' 40.673" E
2	24°11' 9.518" N	87°37' 41.012" E	19	24°11' 3.392" N	87°37' 39.655" E
3	24°11' 9.599" N	87°37' 41.117" E	20	24°11' 3.405" N	87°37' 39.303" E
4	24°11' 9.067" N	87°37' 41.651" E	21	24°11' 4.197" N	87°37' 39.722" E
5	24°11' 8.554" N	87°37' 42.519" E	22	24°11' 4.279" N	87°37' 40.128" E
6	24°11' 7.969" N	87°37' 43.508" E	23	24°11' 5.072" N	87°37' 40.454" E
7	24°11' 7.163" N	87°37' 43.006" E	24	24°11' 5.416" N	87°37' 39.744" E
8	24°11' 6.149" N	87°37' 42.344" E	25	24°11' 5.887" N	87°37' 39.911" E
9	24°11' 5.389" N	87°37' 42.092" E	26	24°11' 6.054" N	87°37' 39.555" E
10	24°11' 5.137" N	87°37' 42.546" E	27	24°11' 6.320" N	87°37' 38.646" E
11	24°11' 4.064" N	87°37' 42.377" E	28	24°11' 6.587" N	87°37' 38.587" E
12	24°11' 4.061" N	87°37' 42.884" E	29	24°11' 7.050" N	87°37' 39.198" E
13	24°11' 3.270" N	87°37' 42.842" E	30	24°11' 7.498" N	87°37' 38.676" E
14	24°11' 2.341" N	87°37' 42.612" E	31	24°11' 8.089" N	87°37' 39.108" E
15	24°11' 2.557" N	87°37' 41.424" E	32	24°11' 8.837" N	87°37' 39.545" E
16	24°11' 2.369" N	87°37' 41.394" E	33	24°11' 9.362" N	87°37' 39.734" E
17	24°11' 2.034" N	87°37' 41.087" E			

LAND DETAILS

Khata No.	Plot No.
05	514, 515, 516(P) 1065, 1066
12	492
16	490, 491, 507, 518(P), 517(P), 519(P), 520(P), 489, 502, 503, 508, 509, 510
20	499, 504

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STATUTORY CLEARANCES

1	LOI/ Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Dumka vide letter no. 723/M, dated 27.06.2024.
2	CO	:	The CO, Shikaripara vide letter no. 969/Ra., dated 25.07.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyani & Register II.
3	DMO	:	DMO, Dumka vide memo no. 853/M, dated 22.07.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 2037, dated 06.09.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Dumka Forest Division vide letter no. 2837, dated 29.08.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Dumka District (Sl. no. 11, Page no. 150).
7	Gram Sabha	:	Gram Sabha conducted on 07.11.2022.
8	Mine Plan Approval	:	Approved by District Mining Officer, Dumka vide Memo No. 1052/M, dated 12.09.2024.
9	Qualified Person	:	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast other than fully mechanized (OTFM) Method	
2	Quarry Area	:	1.886 Ha / 4.66 Acres	Life of Mine – 5 years
3	Waste Generation	:	32699.05 cum	
4	Stripping Ratio	:	1:0.02	
5	Working Days	:	300	
6	Bench: size & No	:	6m to 6m	
7	Elevation of Mine	:	71 m AMSL to 76 m AMSL	
8	Ground Level Elevation	:	71 m AMSL to 76 m AMSL	
9	Ultimate Working	:	50 m AMSL	

	Depth	:	
10	Water Table	:	40 m AMSL
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	21.9 kg/day
13	Diesel/Fuel requirement	:	400 litre/day

Production Details

Year	Production of Stone in Cum	Production of Stone in Tonnes	Overburden in cum	Intercalated waste in Cum	Total Waste in Cum
1st	49438.00	133482.60	5625.00	2602	8227
2nd	49894.00	134713.80	7650.00	2626.00	10276.00
3rd	50445.00	136201.00	3240.00	2655.00	5895.00
4th	51300.00	138510.00	0.00	2700.00	2700.00
5th	51727.50	139664.25	0.00	2722.50	2722.50
Total	252804.50	682572.15	16515.00	13305.50	29820.50

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	Conceptual stage (Ha) (after life of mine)
Excavation	0.00	1.360(0.071 Ha area shall be backfilled, 1.027 Ha converted in to water reservoir and 0.259 Ha shall be left as dead benches)	1.360(0.071 Ha area shall be backfilled, 1.027 Ha converted in to water reservoir and 0.259 Ha shall be left as dead benches)
Waste Dump	0.00	0.00 (waste dump to be removed and backfilled)	Nil (waste dump to be removed and backfilled)
Road	0.055	0.00 (Comes under quarry)	0.00
Infrastructure (Crusher)	0.0	0.00	0.00
Safety Zone	0.0	0.526	0.526
Total Area in Use	0.055	1.886	1.886

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Unused Area	1.183	0.00	0.00
Total Applied Area	1.886	1.886	1.886

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Place of Plantation	Spacing b/w plants	Total No. of Plants	Area Cover in Square Meters	Total Area in Ha.	Species
1st	Safety Zone	2.5 x 2.5	842	5260	0.526	Gulmohar, Gular, Sagwan, Sakua <u>Fruit Bearing Trees</u> Mango, Jackfruit, Guava
	Haul Road	3 x 3	246	1540	0.154	
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			1088	6800	0.680	

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCE, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Budget

PROPOSED FOR ENVIRONMENT MANAGEMENT COST			
S.NO.	Mitigative measures to protect Environment	Capital Cost (in Lakh)	Recurring cost (In Lakh)
01.	Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine)	0.00	2.00
02.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and	3.264	0.544

	fences) @ No. of plants 1966 x 500Rs.		
03	Garland Drain and Desiltation pond	2.00	0.20
04.	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	Nil	0.50
TOTAL		5.264	3.244

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx in the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- The Boundary Pillars of the proposed mine lease area will be maintained properly.
- One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.

- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gablon plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Solid Waste Management

During first, second, third and fourth year gritty soil & intercalated waste will be removed (27098 m³) this soil and waste will be temporarily backfill within the exhausted quarry and in fifth year (2722.5 m³) removed gritty soil, intercalated waste and existing temporary backfill soil will be backfilled within the lower bench of the exhausted quarry.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced
- Optimum quantity of explosives would be used.

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- ♦ Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on Gaur road by using water Tankers.
- ✓ Regular repair of Haul road
- ✓ All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard identification & Risk Analysis In Stone Mining operation

S.No	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be

workers engaged in loading material and driving vehicles. To manage the face stability, the Following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the Inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.

- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted

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by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonators shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible (SI) certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Organizational Structure:

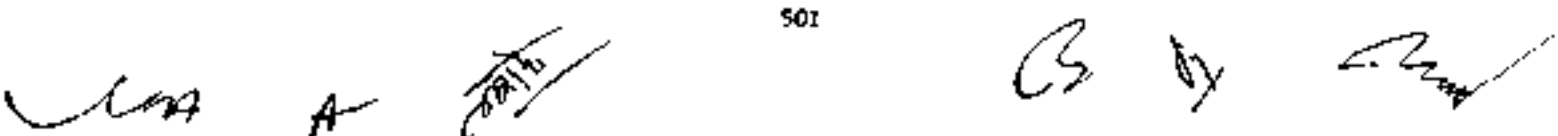
Introduction

The Environmental Management Plan (EMP) Cell has been established to ensure environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. This project aims to minimize environmental harm, promote sustainable practices, ensure compliance with regulations, and foster community engagement and transparency. The EMP Cell will provide a framework for identifying, assessing, and mitigating potential environmental impacts associated with the mining activities.

Environmental Policy

Our company is committed to:

- Minimizing environmental harm through responsible mining practices
- Promoting sustainable practices to conserve natural resources
- Ensuring compliance with regulatory requirements and industry standards
- Fostering community engagement and transparency through open communication

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EMP Cell Objectives

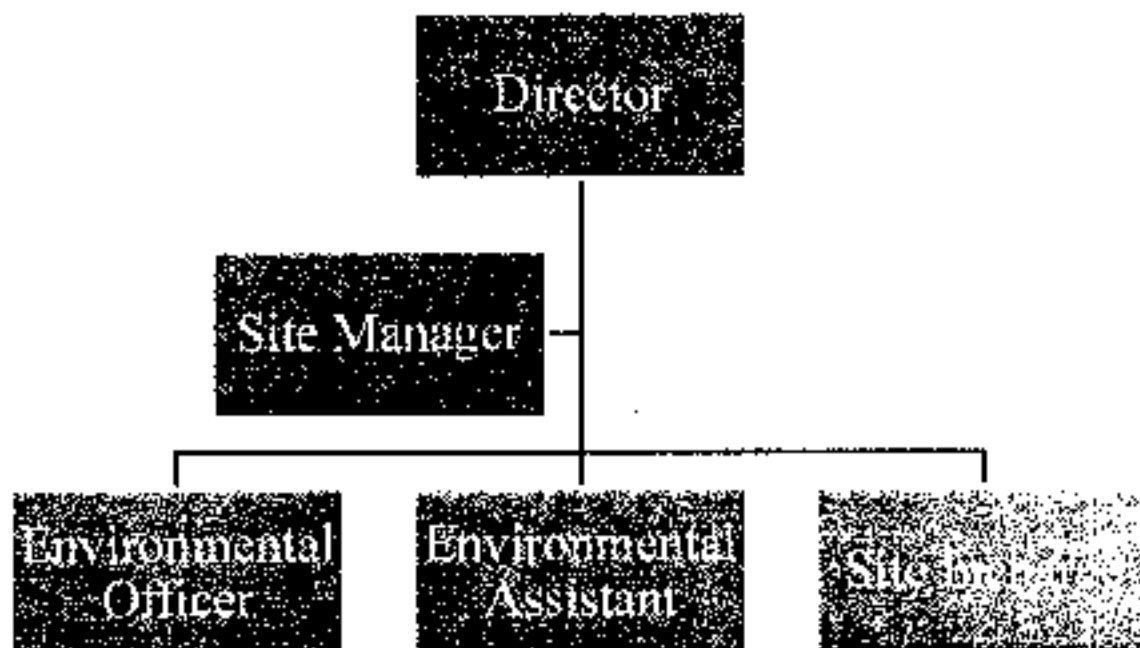
The EMP Cell objectives are:

- Minimize environmental impacts on air, water, soil, and biodiversity
- Ensure compliance with regulatory requirements and industry standards
- Promote sustainable practices through efficient resource utilization
- Enhance community engagement and transparency through regular updates

EMP Cell Structure

The EMP Cell consists of three members:

- Environmental Officer (EO) as Team Lead, responsible for overall strategy
- Environmental Assistant (EA) for Monitoring and Reporting, focusing on data collection
- Administrative Assistant (AA) for Documentation and Coordination, handling administrative tasks



EMP Cell structure

Roles and Responsibilities

Environmental Officer (EO)

- Develop, implement, and review EMP
- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide environmental training
- Manage environmental data collection
- Develop environmental policies
- Conduct site inspections
- Identify and mitigate environmental hazards
- Prepare quarterly reports

Environmental Assistant (EA)

- Conduct field monitoring

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- Collect and record environmental data
- Assist in data analysis and reporting
- Maintain monitoring equipment
- Conduct site inspections
- Assist in preparing quarterly reports
- Update environmental records
- Assist in implementing mitigation measures
- Participate in training programs
- Provide support to EO

Administrative Assistant (AA)

- Maintain environmental records
- Coordinate documentation
- Assist in preparing quarterly reports
- Manage environmental documentation
- Provide administrative support
- Coordinate training logistics
- Maintain communication with regulatory authorities
- Assist in updating policies
- Manage environmental budget
- Provide general administrative support

Director/Top Management Responsibilities

- Provide strategic direction
- Approve environmental policies
- Allocate resources
- Review quarterly reports
- Ensure compliance
- Foster environmental responsibility
- Support employee training
- Review environmental investments
- Ensure integration of environmental considerations

EMP Process Flow

The EMP process flow includes:

1. Environmental Monitoring
2. Data Analysis
3. Report Submission
4. Review and Revision
5. Implementation
6. Compliance Check

Key Decision Points

Key decision points include:

1. Non-compliance: Corrective action and Reporting
2. Environmental incidents: Investigation, Mitigation, and Reporting

Documentation

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Documentation includes:

- EMP manual
- Monitoring records
- Reports
- Inspection records
- Training records

Implementation Timeline

The implementation timeline consists of:

1. Pre-Operational Phase (1 month): Establish EMP
2. Operational Phase (Ongoing): Implement EMP
3. Closure and Rehabilitation Phase (6 months): Restore mined land

Reporting

The EMP Cell will submit quarterly reports to:

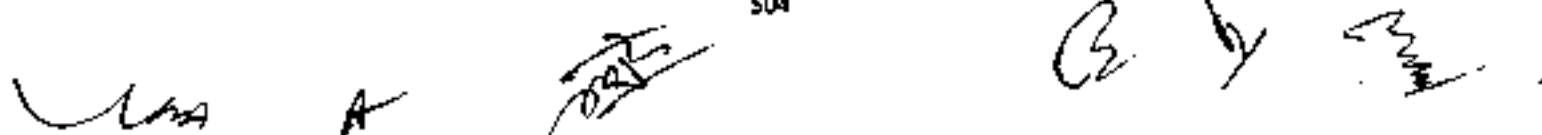
- Company Director
- Regulatory authorities

Conclusion

The EMP Cell is committed to ensuring environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. With a clear structure, roles, and responsibilities, the EMP Cell is equipped to manage environmental impacts and promote sustainable practices.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Chirapathar Stone Deposit-1 of M/s Rudra Minerals (Prop. : Shri Amar Mandal), Village : Chirapathar, Tehsil : Shikaripara, Dist.: Dumka, Jharkhand (1.886 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - II along with following specific conditions :

- I. In compliance of OM no.F.No. 1A3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Noom" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.



- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

7. Ramjam Stone Deposit of M/s Rudra Minerals (Prop. : Shri Amar Mandal), Village : Ramjam, Tehsil : Shikaripara, Distt.: Dumka, Jharkhand (2.565 Ha).

(Proposal no.: SIA/JH/MIN/ 502067 /2024)

Name of the consultant :Crystal Consultants, Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 24.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity – 173576.12 TPA/ 64287.45 Cum / Year.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Ramjam Stone Deposit
2	Lessee:	M/s Rudra Minerals, Proprietor – Sri Amar Mandal
3	Lessee Address	Village – Sejakoda, P.O – Jama, P.S – Jama, District – Dumka, Jharkhand
4	Lease Area	2.565 Ha Acres- 6.34 Acre
5	Type of Land	Non Forest Raiyati Land
6	Project Cost	Rs 16.47 Lakhs
7	EMP Budget	Capital: 6.47 Lakhs Recurring: 3.445 lakhs / year
8	New or Expansion	New
9	Mineable Reserves	cum.: 337892.20 cum Tonnes: 912308.50 tonnes

10	Mine Life	:	5 years
11	Man power	:	18
12	Water Requirement	:	14.38 KLD (Drinking: 0.72 KLD, Industrial: 7.70 KLD, Plantation: 5.96 KLD)
13	Water Source	:	By authorised hired water tankers
14	DG Set / power	:	-
15	Crusher	:	No crusher
16	Nearest Water Body	:	Brahmani river is situated at a distance of 7.2 km in north direction.
17	Nearest Habitation	:	Sikaripara, at 6.5 KM in South-West direction.
18	Nearest Rail Station	:	Pakdaha Railway station, approx. 11 km towards North direction
19	Nearest Air Port	:	Deoghar Airport, approx. 95 km west direction
20	Nearest Forest	:	Kusumghati PF (3 Km), Kauwamahat PF (3.5 Km), Majhladih PF (2 Km), Daldali PF (3 Km)
21	Road & Highways	:	NH – 114A, Approx. 5.65 km in North direction

CO-ORDINATES

S. No.	Latitude	Longitude	S. No.	Latitude	Longitude
1	24°8' 11.0215"N	87°34' 21.9965"E	28	24°8' 2.8501"N	87°34' 24.5803"E
2	24°8' 10.4721"N	87°34' 23.622"E	29	24°8' 2.8291"N	87°34' 24.3888"E
3	24°8' 10.6308"N	87°34' 23.7982"E	30	24°8' 2.345"N	87°34' 24.0789"E
4	24°8' 10.4783"N	87°34' 24.9115"E	31	24°8' 2.7035"N	87°34' 23.104"E
5	24°8' 10.3995"N	87°34' 26.0042"E	32	24°8' 2.9576"N	87°34' 22.9355"E
6	24°8' 10.5228"N	87°34' 26.6327"E	33	24°8' 3.1395"N	87°34' 22.7212"E
7	24°8' 10.0577"N	87°34' 26.7396"E	34	24°8' 3.5891"N	87°34' 22.5477"E
8	24°8' 9.8262"N	87°34' 27.198"E	35	24°8' 3.7217"N	87°34' 21.9623"E
9	24°8' 9.7528"N	87°34' 27.1784"E	36	24°8' 4.1632"N	87°34' 22.0373"E
10	24°8' 9.7278"N	87°34' 27.0923"E	37	24°8' 4.3028"N	87°34' 20.8493"E
11	24°8' 9.395"N	87°34' 26.923"E	38	24°8' 4.8996"N	87°34' 20.7659"E
12	24°8' 8.4808"N	87°34' 26.6909"E	39	24°8' 6.7451"N	87°34' 20.9861"E
13	24°8' 7.5221"N	87°34' 26.5623"E	40	24°8' 6.4035"N	87°34' 21.9784"E
14	24°8' 7.4999"N	87°34' 26.4284"E	41	24°8' 6.0245"N	87°34' 23.0792"E

WCA A  (B)  

15	24°8' 6.9032"N	87°34' 26.1426"E	42	24°8' 6.8574"N	87°34' 23.5896"E
16	24°8' 6.4033"N	87°34' 25.7796"E	43	24°8' 6.9644"N	87°34' 23.3082"E
17	24°8' 6.2706"N	87°34' 25.6162"E	44	24°8' 7.1128"N	87°34' 23.3883"E
18	24°8' 5.801"N	87°34' 25.5486"E	45	24°8' 7.5063"N	87°34' 22.0829"E
19	24°8' 5.9635"N	87°34' 24.7441"E	46	24°8' 7.9071"N	87°34' 20.7998"E
20	24°8' 5.3703"N	87°34' 24.556"E	47	24°8' 8.2399"N	87°34' 20.7234"E
21	24°8' 4.3934"N	87°34' 24.3583"E	48	24°8' 9.0283"N	87°34' 21.2462"E
22	24°8' 3.8064"N	87°34' 24.4741"E	49	24°8' 8.5297"N	87°34' 22.1337"E
23	24°8' 3.768"N	87°34' 25.0519"E	50	24°8' 8.6375"N	87°34' 23.1094"E
24	24°8' 3.5944"N	87°34' 25.0097"E	51	24°8' 9.3487"N	87°34' 23.332"E
25	24°8' 3.4137"N	87°34' 24.8965"E	52	24°8' 9.7811"N	87°34' 23.1589"E
26	24°8' 3.4575"N	87°34' 24.8197"E	53	24°8' 10.2599"N	87°34' 21.8302"E
27	24°8' 3.1179"N	87°34' 24.6091"E			

LAND DETAILS

Khata no.	Plot no.
32	515 & 520

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Dumka vide letter no. 771/M, dated 05.07.2024.
2	CO	:	The CO, Shikaripara vide letter no. 464/Ra., dated 11.06.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyar & Register II.
3	DMO	:	DMO, Dumka vide memo no. 852/M, dated 22.07.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 799, dated 09.05.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Dumka Forest Division vide letter no. 887, dated 12.04.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project

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		site.
6	DSR	This project is mentioned in approved DSR of Dumka District (Sl. no. 18, Page no. 152).
7	Gram Sabha	Gram Sabha conducted on 04.03.2024.
8	Mine Plan Approval	Approved by District Mining Officer, Dumka vide Letter No. 1079/M, dated 21.09.2024
9	Qualified Person	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast other than fully mechanized (OTFM) Method	
2	Quarry Area	:	2.565 Ha / 6.34 Acres	Life of Mine – 5 years
3	Waste Generation	:	47344.15 cum	
4	Stripping Ratio	:	1:0.02	
5	Working Days	:	300	
6	Bench: size & No	:	6m to 6m	
7	Elevation of Mine	:	114 m AMSL to 118 m AMSL	
8	Ground Level Elevation	:	114 m AMSL to 118 m AMSL	
9	Ultimate Working Depth	:	93 m AMSL	
10	Water Table	:	86 m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	27.22 kg/day	
13	Diesel/Fuel requirement	:	400 litre/day	

Production Details

Year	Production of Stone in Cum	Production of Stone in Tonnes	Overburden in cum	Intercalated waste in Cum	Total Waste in Cum
1st	60268.00	162723.60	8424.00	3172.00	11596.00
2nd	60465.60	163257.12	0.00	3182.40	3182.40
3rd	61003.30	164708.91	10313.00	3210.70	13523.70

4th	61721.50	166648.05	12410.00	3248.50	15658.50
5th	64287.45	173576.12	0.00	3383.55	3383.55
Total	307745.85	830913.80	31147.00	16197.15	47344.15

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	Conceptual stage (Ha) (after life of mine)
Excavation	0.626	1.955 (0.140 Ha area shall be backfilled, 1.272 Ha converted in to water reservoir and 0.543 Ha shall be left as dead benches)	1.955 (0.140 Ha area shall be backfilled, 1.272 Ha converted in to water reservoir and 0.543 Ha shall be left as dead benches)
Waste Dump	0.251	0.00 (waste dump to be removed and backfilled)	Nil (waste dump to be removed and backfilled)
Road	0.031	0.00	0.00
Infrastructure (Crusher)	0.0	0.00	0.00
Safety Zone	0.0	0.610	0.610
Total Area in Use	0.908	2.565	2.565
Unused Area	1.657	0.00	0.00
Total Applied Area	2.565	2.565	2.565

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Place of Plantation	Spacing b/w plants	Total No. of Plants	Area Cover in Square Meters	Total Area in Ha.	Species
1st	Safety Zone	2.5 x 2.5	976	6100	0.610	Gulmohar, Gular, Sagwan, Sakua <u>Fruit Bearing Trees</u> Mango, Jackfruit, Guava
	Haul Road	3 x 3	514	3210	0.321	
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			1490	9310	0.931	

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand, Records of same to be maintained and will be submitted with compliance report.

Environment Management Budget

PROPOSED FOR ENVIRONMENT MANAGEMENT COST			
S.NO.	Mitigative measures to protect Environment	Capital Cost (in Lakh)	Recurring cost (in Lakh)
01.	Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine)	0.00	2.00
02.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @ No. of plants 1966 x 500Rs.	4.47	0.745
03	Garland Drain and Desiltation pond	2.00	0.20
04.	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	Nil	0.50
TOTAL		6.47	3.445

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx in the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly

3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- The Boundary Pillars of the proposed mine lease area will be maintained properly.
- One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- If any tree felling than necessary permission shall be taken from the competent authority.
- Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Solid Waste Management

During first, second, third and fourth year gritty soil & intercalated waste will be removed (43960.60 m^3) this soil and waste will be temporarily backfill within the exhausted quarry and in fifth year (3383.55 m^3) removed gritty soil, intercalated waste and existing temporary backfill soil will be backfilled within the lower bench of the exhausted quarry.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.

- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced
- Optimum quantity of explosives would be used
- Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on Haul road by using water Tankers.
- ✓ Regular repair of Haul road
- ✓ All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5

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3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face Instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others

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may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department.

Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonators shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.

- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Organizational Structure:

Introduction

The Environmental Management Plan (EMP) Cell has been established to ensure environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. This project aims to minimize environmental harm, promote sustainable practices, ensure compliance with regulations, and foster community engagement and transparency. The EMP Cell will provide a framework for identifying, assessing, and mitigating potential environmental impacts associated with the mining activities.

Environmental Policy

Our company is committed to:

- Minimizing environmental harm through responsible mining practices
- Promoting sustainable practices to conserve natural resources
- Ensuring compliance with regulatory requirements and industry standards
- Fostering community engagement and transparency through open communication

EMP Cell Objectives

The EMP Cell objectives are:

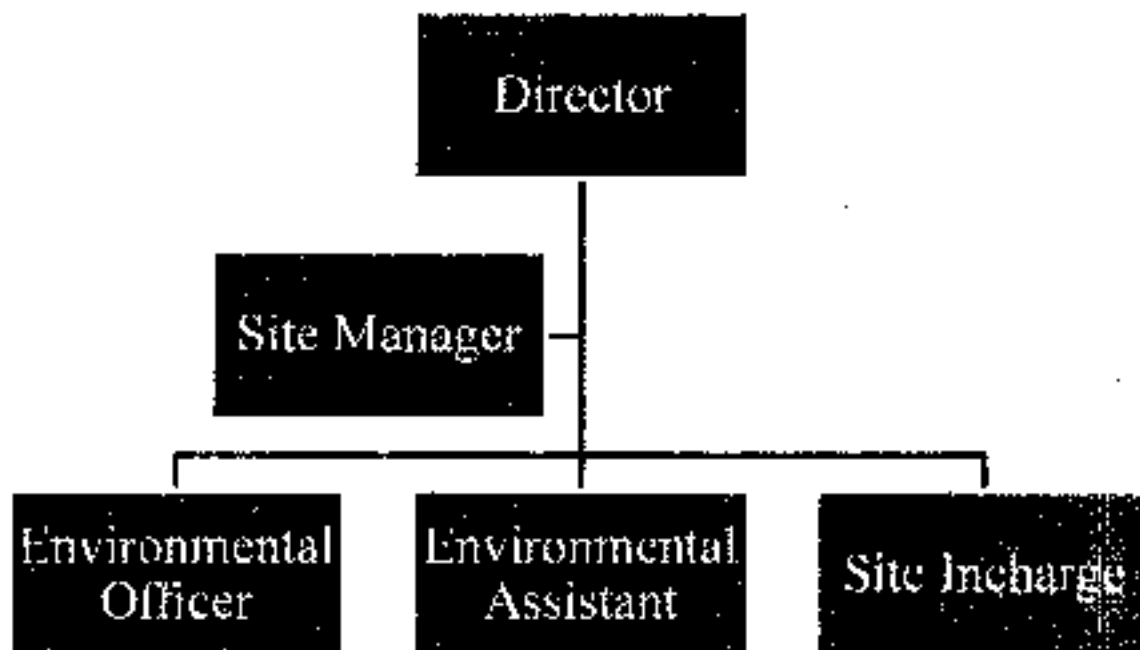
- Minimize environmental impacts on air, water, soil, and biodiversity
- Ensure compliance with regulatory requirements and industry standards
- Promote sustainable practices through efficient resource utilization
- Enhance community engagement and transparency through regular updates

EMP Cell Structure

The EMP Cell consists of three members:

- Environmental Officer (EO) as Team Lead, responsible for overall strategy
- Environmental Assistant (EA) for Monitoring and Reporting, focusing on data collection
- Administrative Assistant (AA) for Documentation and Coordination, handling administrative tasks

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EMP Cell structure

Roles and Responsibilities

Environmental Officer (EO)

- Develop, implement, and review EMP
- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide environmental training
- Manage environmental data collection
- Develop environmental policies
- Conduct site inspections
- Identify and mitigate environmental hazards
- Prepare quarterly reports

Environmental Assistant (EA)

- Conduct field monitoring
- Collect and record environmental data
- Assist in data analysis and reporting
- Maintain monitoring equipment
- Conduct site inspections
- Assist in preparing quarterly reports
- Update environmental records
- Assist in implementing mitigation measures
- Participate in training programs
- Provide support to EO

Administrative Assistant (AA)

- Maintain environmental records
- Coordinate documentation

- Assist in preparing quarterly reports
- Manage environmental documentation
- Provide administrative support
- Coordinate training logistics
- Maintain communication with regulatory authorities
- Assist in updating policies
- Manage environmental budget
- Provide general administrative support

Director/Top Management Responsibilities

- Provide strategic direction
- Approve environmental policies
- Allocate resources
- Review quarterly reports
- Ensure compliance
- Foster environmental responsibility
- Support employee training
- Review environmental investments
- Ensure integration of environmental considerations

EMP Process Flow

The EMP process flow includes:

1. Environmental Monitoring
2. Data Analysis
3. Report Submission
4. Review and Revision
5. Implementation
6. Compliance Check

Key Decision Points

Key decision points include:

1. Non-compliance: Corrective action and Reporting
2. Environmental incidents: Investigation, Mitigation, and Reporting

Documentation

Documentation includes:

- EMP manual
- Monitoring records
- Reports
- Inspection records
- Training records

Implementation Timeline

The implementation timeline consists of:

1. Pre-Operational Phase (1 month): Establish EMP
2. Operational Phase (Ongoing): Implement EMP
3. Closure and Rehabilitation Phase (6 months): Restore mined land

Reporting

The EMP Cell will submit quarterly reports to:

- Company Director
- Regulatory authorities

Conclusion

The EMP Cell is committed to ensuring environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. With a clear structure, roles, and responsibilities, the EMP Cell is equipped to manage environmental impacts and promote sustainable practices.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Ramjam Stone Deposit of M/s Rudra Minerals (Prop. : Shri Amar Mandal), Village : Ramjam, Tehsil : Shikaripara, Distt.: Dumka, Jharkhand (2.565 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

8. Salbona Pahar Stone Deposit of M/s Shri Choto Budhray Hansda, Village : Salbona Pahar, Tehsil : Shikaripara, Distt.: Dumka, Jharkhand (2.476 Ha).

(Proposal no.: SIA/JH/MIN/ 502089 /2024)

Name of the consultant :Crystal Consultants, Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 24.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity - 183592 TPA

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Salbonapahar Stone Deposit
2	Lessee:	: Sri Choto Budhray Hansda
3	Lessee Address	: Sri Choto Budhray Hansda Village – Mohulbana, P.O – Pakdaha, P.S – Sikaripara, District – Dumka, Jharkhand
4	Lease Area	: 2.476 Ha Acres- 6.12 Acre
5	Type of Land	: Non-Forest Ralyati Land
6	Project Cost	: Rs 16.086 Lakhs
7	EMP Budget	: Capital: 6.086 Lakhs Recurring: 3.38 / year
8	New or Expansion	: New
9	Mineable Reserves	: cum.: 337892.20 cum Tonnes: 912308.50 tonnes
10	Mine Life	: 5 years
11	Man power	: 24
12	Water Requirement	: 13.84 KLD (Drinking: 0.96 KLD, Industrial: 7.43 KLD, Plantation: 5.45 KLD)
13	Water Source	: From Nearby villages by hired tankers
14	DG Set / power	: -
15	Crusher	: No crusher
16	Nearest Water Body	: Brahmani river is situated at a distance of 9.0 km in north direction.
17	Nearest Habitation	: Sikaripara, at 6.5 KM in South-West direction.
18	Nearest Rail Station	: Pakdaha Railway station, approx. 5.1 km towards North direction

19	Nearest Air Port	:	Deoghar Airport, approx. 90 km Inn west direction.
20	Nearest Forest	:	2.5 km in South – West direction
21	Road & Highways	:	NH – 114A, Approx. 3.0 km towards North direction.

CO-ORDINATES

S. No.	Latitude	Longitude	S. No.	Latitude	Longitude
1	24°11' 32.097" N	87°34' 3.397" E	16	24°11' 29.869" N	87°34' 11.813" E
2	24°11' 32.275" N	87°34' 4.698" E	17	24°11' 29.973" N	87°34' 10.255" E
3	24°11' 32.417" N	87°34' 6.081" E	18	24°11' 29.808" N	87°34' 10.036" E
4	24°11' 32.550" N	87°34' 7.555" E	19	24°11' 29.739" N	87°34' 8.333" E
5	24°11' 32.591" N	87°34' 9.094" E	20	24°11' 29.512" N	87°34' 8.249" E
6	24°11' 32.553" N	87°34' 10.548" E	21	24°11' 29.434" N	87°34' 7.676" E
7	24°11' 32.511" N	87°34' 11.428" E	22	24°11' 30.298" N	87°34' 7.773" E
8	24°11' 32.337" N	87°34' 12.746" E	23	24°11' 30.373" N	87°34' 7.298" E
9	24°11' 32.137" N	87°34' 13.920" E	24	24°11' 30.479" N	87°34' 7.208" E
10	24°11' 31.944" N	87°34' 14.993" E	25	24°11' 30.490" N	87°34' 6.232" E
11	24°11' 31.077" N	87°34' 14.737" E	26	24°11' 30.048" N	87°34' 5.822" E
12	24°11' 31.011" N	87°34' 15.077" E	27	24°11' 29.932" N	87°34' 5.597" E
13	24°11' 30.118" N	87°34' 14.686" E	28	24°11' 29.942" N	87°34' 4.501" E
14	24°11' 29.230" N	87°34' 14.190" E	29	24°11' 29.937" N	87°34' 3.741" E
15	24°11' 29.501" N	87°34' 13.094" E	30	24°11' 30.954" N	87°34' 3.555" E

LAND DETAILS:

Khata No.	Plot No.
18	137(p)
17	140(p)
4	141(p)
6	142(p)

STATUTORY CLEARANCES

1	LOI / Lease docs	: The Letter of Intent (LOI) has been issued by District Mining Officer, Dumka vide letter no 719/M, dated 22.06.2024.
2	CO	: The CO, Shikaripara vide letter no. 1282/Ra., dated 06.11.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhar" in R.S. Khatyan & Register II.
3	DMO	: DMO, Dumka vide memo no. 1362/M, dated 18.11.2023 certified that 01 other mining lease area (3.40 Acre) exists within 500 meters radius from proposed project site.
4	DFO Wild Life	: DFO, Wildlife Division, Hazaribag vide letter no. 1836, dated 23.08.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	: Division Forest Officer, Dumka Forest Division vide letter no. 2609, dated 03.08.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	: This project is mentioned in approved DSR of Dumka District (Sl. no. 09, Page no. 150).
7	Gram Sabha	: Gram Sabha conducted on 29.07.2023.
8	Mine Plan Approval	: Approved by District Mining Officer, Dumka vide Letter No. 1053/M, dated 12.09.2024.
9	Qualified Person	: Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast other than fully mechanized (OTFM) Method	
2	Quarry Area	:	2.476 Ha / 6.12 Acres	Life of Mine – 5 years
3	Waste Generation	:	61979.80 cum	
4	Stripping Ratio	:	1:0.04	
5	Working Days	:	300	
6	Bench: size & No	:	6m to 6m	
7	Elevation of Mine	:	232 AMSL to 264 AMSL	
8	Ground Level Elevation	:	232 m AMSL to 264 m AMSL	
9	Ultimate Working Depth	:	225 m AMSL	

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10	Water Table	: 200 m AMSL
11	Topography of Mine	: Area represents gently sloping land.
12	Explosive Requirement	: 28.8 kg/day
13	Diesel/Fuel requirement	: 400 litre/day

Production Details

Year	Production of Stone in Cum	Production of Stone in Tonnes	Overburden in cum	Intercalated waste in Cum	Total Waste in Cum
1st	66667.20	180001.44	15572.00	3508.80	19080.80
2nd	67442.40	182094.48	4352.00	3549.60	7901.60
3rd	67997.20	183592.00	8706.00	3578.80	12284.80
4th	67811.00	183089.70	11266.00	3569.00	14835.00
5th	67974.40	183530.88	4300.00	3577.60	7877.60
Total	337892.20	912308.50	44196.00	17783.80	61979.80

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	Conceptual stage (Ha) (after life of mine)
Excavation	0.0	1.910 (including backfilling 0.132 Ha)	1.910 (0.132 Ha area shall be backfilled, 0.556 Ha area shall be left as water reservoir and 1.222 Ha shall be left as dead benches).
Waste Dump	0.00	0.00	Nil (waste dump to be removed and backfilled)
Road	0.00	0.004	0.0
Infrastructure (Crusher)	0.0	0.00	-
Safety Zone	0.0	0.566	0.566
Total Area in Use	0.00	2.476	2.476
Unused Area	2.476	0.00	0.00
Total Applied Area	2.476	2.476	2.476

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Place of Plantation	Spacing b/w plants	Total No. of Plants	Area Cover in Square Meters	Total Area in Ha.	Species
1st	Safety Zone	2.5 x 2.5	848	5500	0.55	Gulmohar,
	Haul Road	3 x 3	477	40 M Approach		Gular, Sagwan,

				Road 477 Plant were planted		Sakua <u>Fruit Bearing Trees</u> Mango, Jackfruit, Guava
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			1325	0.55	0.55	

- Gablon Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Budget

PROPOSED FOR ENVIRONMENT MANAGEMENT COST			
S.NO.	Mitigative measures to protect Environment	Capital Cost (In Lakh)	Recurring cost (In Lakh)
01.	Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine)	2.0	0.20
02.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @ No. of plants 1966 x 500Rs.	3.975	0.6625
03.	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	Nil	0.50
TOTAL		5.925	1.3625

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate	2 Stations	Six Monthly

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	location for PM10, PM2.5, SO2, NOx In the vicinity of the mine area. In the surrounding area covering project site only.		
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Solid Waste Management

During first, second, third and fourth year gritty soil & Intercalated waste will be removed (19055.26 m^3) this soil and waste will be temporarily backfill within the exhausted quarry and in fifth year (4744.85 m^3) removed gritty soil, intercalated waste and existing temporary backfill soil will be backfilled within the lower bench of the exhausted quarry.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced
- Optimum quantity of explosives would be used.
- Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

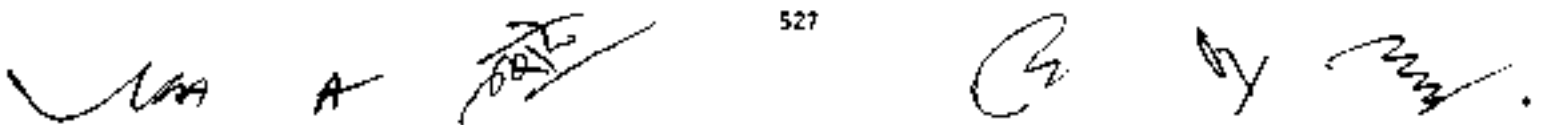
Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on Gaur road by using water Tankers.
- ✓ Regular repair of Haul road
- ✓ All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method;

Hazard identification & Risk Analysis in Stone Mining operation



S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling

- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

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The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.

- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonators shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge

of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Organizational Structure:

Introduction

The Environmental Management Plan (EMP) Cell has been established to ensure environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. This project aims to minimize environmental harm, promote sustainable practices, ensure compliance with regulations, and foster community engagement and transparency. The EMP Cell will provide a framework for identifying, assessing, and mitigating potential environmental impacts associated with the mining activities.

Environmental Policy

Our company is committed to:

- Minimizing environmental harm through responsible mining practices
- Promoting sustainable practices to conserve natural resources
- Ensuring compliance with regulatory requirements and industry standards
- Fostering community engagement and transparency through open communication

EMP Cell Objectives

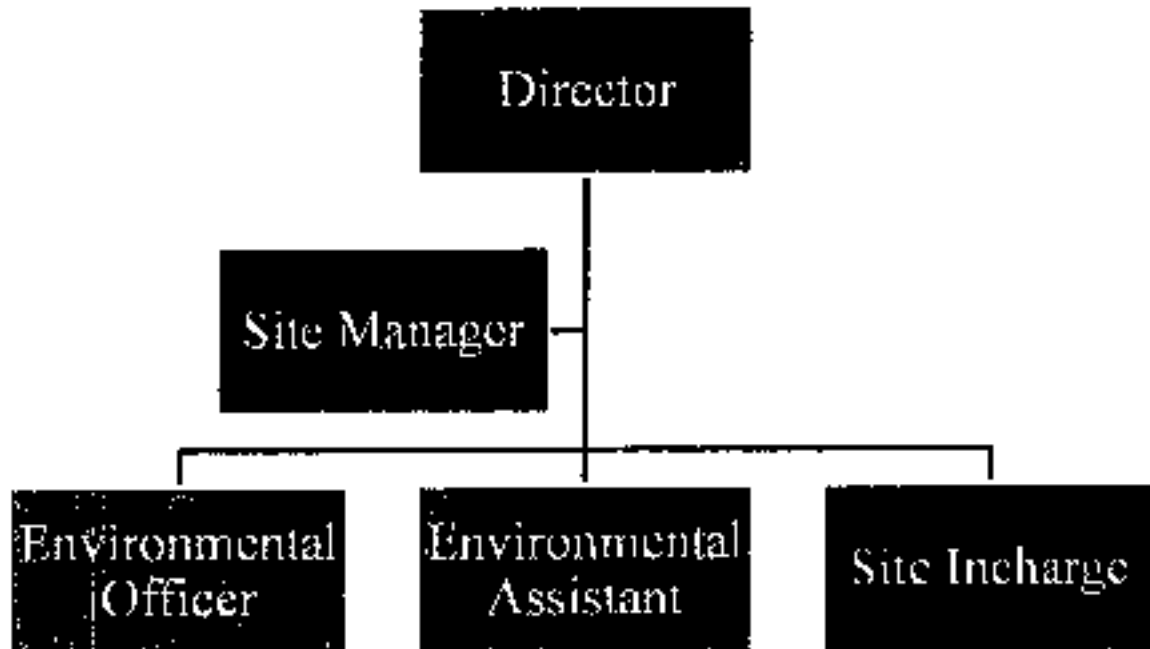
The EMP Cell objectives are:

- Minimize environmental impacts on air, water, soil, and biodiversity
- Ensure compliance with regulatory requirements and industry standards
- Promote sustainable practices through efficient resource utilization
- Enhance community engagement and transparency through regular updates

EMP Cell Structure

The EMP Cell consists of three members:

- Environmental Officer (EO) as Team Lead, responsible for overall strategy
- Environmental Assistant (EA) for Monitoring and Reporting, focusing on data collection
- Administrative Assistant (AA) for Documentation and Coordination, handling administrative tasks



EMP Cell structure

Roles and Responsibilities

Environmental Officer (EO)

- Develop, implement, and review EMP
- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide environmental training
- Manage environmental data collection
- Develop environmental policies
- Conduct site inspections
- Identify and mitigate environmental hazards
- Prepare quarterly reports

Environmental Assistant (EA)

- Conduct field monitoring
- Collect and record environmental data
- Assist in data analysis and reporting
- Maintain monitoring equipment
- Conduct site inspections
- Assist in preparing quarterly reports
- Update environmental records

- Assist in implementing mitigation measures
- Participate in training programs
- Provide support to EO

Administrative Assistant (AA)

- Maintain environmental records
- Coordinate documentation
- Assist in preparing quarterly reports
- Manage environmental documentation
- Provide administrative support
- Coordinate training logistics
- Maintain communication with regulatory authorities
- Assist in updating policies
- Manage environmental budget
- Provide general administrative support

Director/Top Management Responsibilities

- Provide strategic direction
- Approve environmental policies
- Allocate resources
- Review quarterly reports
- Ensure compliance
- Foster environmental responsibility
- Support employee training
- Review environmental investments
- Ensure integration of environmental considerations

EMP Process Flow

The EMP process flow includes:

1. Environmental Monitoring
2. Data Analysis
3. Report Submission
4. Review and Revision
5. Implementation
6. Compliance Check

Key Decision Points

Key decision points include:

1. Non-compliance: Corrective action and Reporting
2. Environmental incidents: Investigation, Mitigation, and Reporting

Documentation

Documentation includes:

- EMP manual
- Monitoring records
- Reports
- Inspection records
- Training records

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Implementation Timeline

The implementation timeline consists of:

1. Pre-Operational Phase (1 month): Establish EMP
2. Operational Phase (Ongoing): Implement EMP
3. Closure and Rehabilitation Phase (6 months): Restore mined land

Reporting

The EMP Cell will submit quarterly reports to:

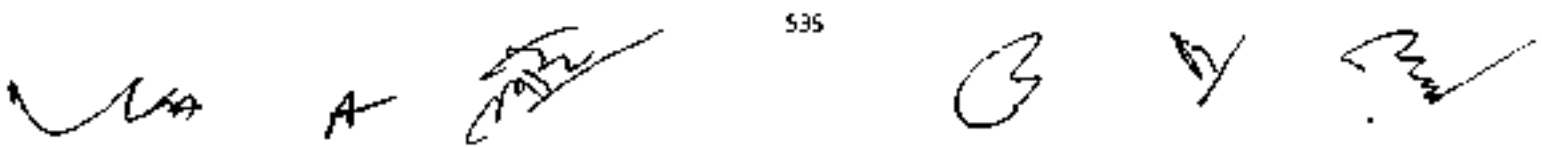
- Company Director
- Regulatory authorities

Conclusion

The EMP Cell is committed to ensuring environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. With a clear structure, roles, and responsibilities, the EMP Cell is equipped to manage environmental impacts and promote sustainable practices.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Salbona Pahar Stone Deposit of M/s Shri Choto Budhray Hansda, Village : Salbona Pahar, Tehsil : Shikaripara, Distt.: Dumka, Jharkhand (2.476 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nlc.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests. Summary findings of same to be submitted along with 6 monthly compliance.



- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

9. Salbona Pahar Stone Deposit of Shri Subham Keshri, Village : Salbona Pahar, Tehsil : Shikaripara, Distt.: Dumka, Jharkhand (2.94 Ha).

(Proposal no.: SIA/JH/MIN/ 502108 /2024)

Name of the consultant :Crystal Consultants, Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 24.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity - 257070 TPA

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Salbonapahar Stone Deposit
2	Lessee:	Sri Subham Keshri
3	Lessee Address	Sri Subham Keshri Village – Benegram, P.O – Dokhalbati, P.S – Margram, District – Birbhum, West Bengal
4	Lease Area	2.94 Ha Acres- 7.27 Acre
5	Type of Land	Non Forest Ralyati Land
6	Project Cost	Rs 15.975 Lakhs
7	EMP Budget	Capital: 5.975 Lakhs Recurring: 3.3625 / year
8	New or Expansion	New
9	Mineable Reserves	cum.: 337892.20 cum Tonnes: 912308.50 tonnes

10	Mine Life	:	5 years
11	Man power	:	22
12	Water Requirement	:	14.88 KLD (Drinking: 0.88 KLD, Industrial: 8.70 KLD, Plantation: 5.30 KLD)
13	Water Source	:	By Authorised hired water tankers
14	DG Set / power	:	-
15	Crusher	:	No crusher
16	Nearest Water Body	:	Brahmani river is situated at a distance of 9.0 km in north direction.
17	Nearest Habitation	:	Sikaripara, at 12.5 Km in North-West direction.
18	Nearest Rail Station	:	Pakdaha Railway station, approx. 6.5 km towards North direction
19	Nearest Air Port	:	Deoghar Airport, approx. 90 km in west direction.
20	Nearest Forest	:	Kazunghati PF (3 Km), Kauramahal PF (3.5 Km), Majhladih PF (2 Km), Daidali PF (3 Km)
21	Road & Highways	:	NH – 114A, Approx. 3.5 km towards North direction.

CO-ORDINATES

S. No.	Latitude	Longitude	S. No.	Latitude	Longitude
1	24°11'28.156"N	87°33'59.151"E	13	24°11'21.976" N	87°34'4.659" E
2	24°11'28.264"N	87°34'0.00"E	14	24°11'22.198" N	87°34'3.437"E
3	24°11'28.431"N	87°34'0.818"E	15	24°11'22.378"N	87°34'2.546"E
4	24°11'29.272"N	87°34'1.965"E	16	24°11'22.290"N	87°34'2.178"E
5	24°11'28.083"N	87°34'2.602"E	17	24°11'22.377"N	87°34'2.013"E
6	24°11'28.611"N	87°34'3.447"E	18	24°11'22.318"N	87°34'1.330"E
7	24°11'29.020"N	87°34'4.216"E	19	24°11'22.494"N	87°34'0.774"E
8	24°11'28.957"N	87°34'4.429"E	20	24°11'22.505"N	87°33'59.980"E
9	24°11'27.810" N	87°34'4.466"E	21	24°11'22.515"N	87°33'59.107"E
10	24°11'26.432" N	87°34'4.512"E	22	24°11'23.729"N	87°33'59.084"E
11	24°11'25.232" N	87°34'4.551"E	23	24°11'25.058"N	87°33'59.095"E
12	24°11'23.628" N	87°34'4.604"E	24	24°11'26.632"N	87°33'59.107"E

LAND DETAILS

Khata no.	Plot no.
11	147 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Dumka vide letter no. 748/M, dated 01.07.2024.
2	CO	:	The CO, Shikaripara vide letter no. 132/Ra., dated 26.02.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatyan & Register II.
3	DMO	:	DMO, Dumka vide memo no. 1369/M, dated 23.11.2023 certified that 01 other mining lease area (3.40 Acre) exists within 500 meters radius from proposed project site and total area is 10.67 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 355, dated 26.02.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Dumka Forest Division vide letter no. 3683, dated 05.12.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Dumka District (Sl. no. 16, Page no. 152).
7	Gram Sabha	:	Gram Sabha conducted on 20.11.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Dumka vide Letter No. 1106/M, dated 26.09.2024.
9	Qualified Person	:	Shri Sahadev Singh was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast other than fully mechanized (OTFM) Method	
2	Quarry Area	:	2.94 Ha / 7.27 Acres	Life of Mine – 5 years
3	Waste Generation	:	61979.80 cum	
4	Stripping Ratio	:	1:0.04	

5	Working Days	:	300
6	Bench: size & No	:	6m to 6m
7	Elevation of Mine	:	250 AMSL to 259 AMSL
8	Ground Level Elevation	:	250 m AMSL to 259 m AMSL
9	Ultimate Working Depth	:	217 m AMSL
10	Water Table	:	190 m AMSL
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	18 kg/day
13	Diesel/fuel requirement	:	400 litre/day

Production Details

Year	Production of Stone in Cum	Production of Stone in Tonnes	Overburden in cum	Intercalated waste in Cum	Total Waste in Cum
1st	90440.35	244188.95	48835.39	4760.02	53595.41
2nd	90440.35	244188.95	3792.06	4760.02	8552.08
3rd	85958.11	232086.90	0.00	4524.11	4525.11
4th	95211.11	257070.00	19536.48	5011.11	24547.59
5th	90152.18	243410.90	0.00	4744.85	4744.85
Total	452202.10	1220945.70	72163.93	23800.11	95964.04

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	Conceptual stage (Ha) (after life of mine)
Excavation	0.0	2.41	2.41 (1.34 Ha area shall be converted water reservoir and 1.07 Ha shall be left as dead benches).
Waste Dump	0.00	(0.010 backfill comes under mining)	(0.010 backfill comes under mining)
Road	0.00	Comes under mining	Comes under mining
Infrastructure (Crusher)	0.0	Comes under mining	Comes under mining
Safety Zone	0.0	0.53	0.53

Total Area in Use	0.00	2.94	2.94
Unused Area	2.94	0.00	0.00
Total Applied Area	2.94	2.94	2.94

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Place of Plantation	Spacing b/w plants	Total No. of Plants	Area Cover In Square Meters	Total Area in Ha.	Species
1st	Safety Zone	2.5 x 2.5	848	5500	0.55	Gulmohar, Gular, Sagwan, Sakua <u>Fruit Bearing Trees</u> Mango, Jackfruit, Guava
	Haul Road	3 x 3	477	40 M Approach Road 477 Plant were planted		
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			1325	0.55	0.55	

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Budget

PROPOSED FOR ENVIRONMENT MANAGEMENT COST			
S.NO.	Mitigative measures to protect Environment	Capital Cost (in Lakh)	Recurring cost (in Lakh)
01.	Water Sprinkling/Air pollution control (Dust	2.0	0.20

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	Suppression along haulage road and mine)		
02.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @ No. of plants 1966 x 500Rs.	3.975	0.6625
03.	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	Nil	0.50
TOTAL		5.925	1.3625

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx In the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- The Boundary Pillars of the proposed mine lease area will be maintained properly.
- One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.

- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Solid Waste Management

During first, second, third and fourth year gritty soil & intercalated waste will be removed (91220.19 m^3) this soil and waste will be temporarily backfill within the exhausted quarry and in fifth year (4744.85 m^3) removed gritty soil, intercalated waste and existing temporary backfill soil will be backfilled within the lower bench of the exhausted quarry.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced

- Optimum quantity of explosives would be used.
- Blasting to be done during favorable weather conditions

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on Haul road by using water Tankers.
- ✓ Regular repair of Haul road
- ✓ All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method.

Hazard identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonators shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)

- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Organizational Structure:

Introduction

The Environmental Management Plan (EMP) Cell has been established to ensure environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. This project aims to minimize environmental harm, promote sustainable practices, ensure compliance with regulations, and foster community engagement and

transparency. The EMP Cell will provide a framework for identifying, assessing, and mitigating potential environmental impacts associated with the mining activities.

Environmental Policy

Our company is committed to:

- Minimizing environmental harm through responsible mining practices
- Promoting sustainable practices to conserve natural resources
- Ensuring compliance with regulatory requirements and industry standards
- Fostering community engagement and transparency through open communication

EMP Cell Objectives

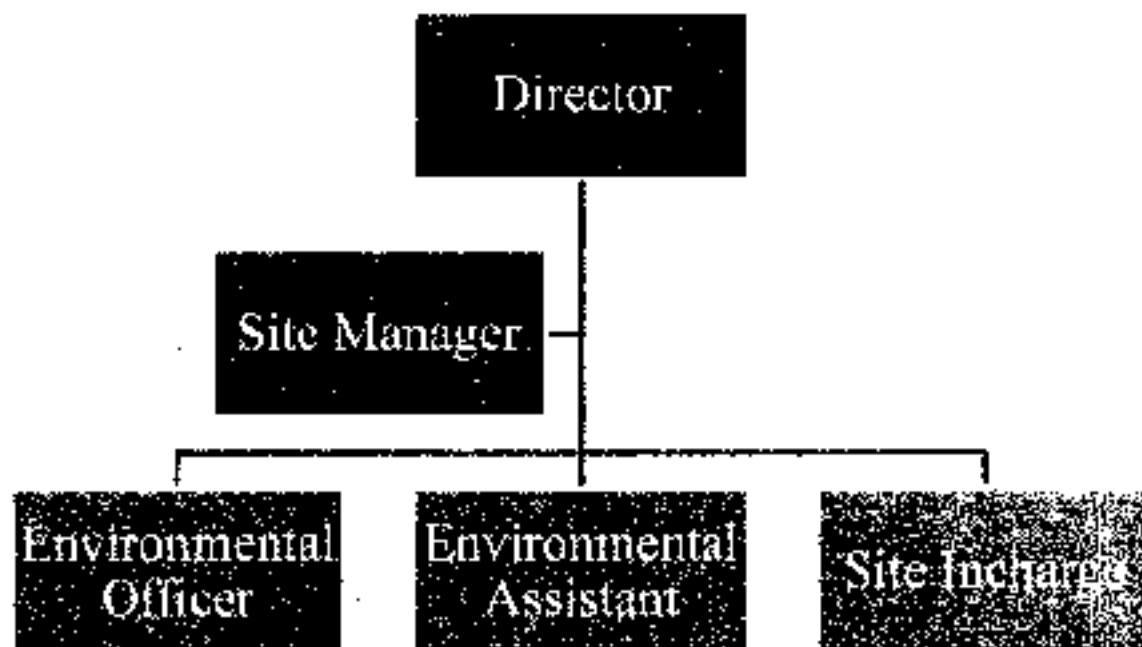
The EMP Cell objectives are:

- Minimize environmental impacts on air, water, soil, and biodiversity
- Ensure compliance with regulatory requirements and industry standards
- Promote sustainable practices through efficient resource utilization
- Enhance community engagement and transparency through regular updates

EMP Cell Structure

The EMP Cell consists of three members:

- Environmental Officer (EO) as Team Lead, responsible for overall strategy
- Environmental Assistant (EA) for Monitoring and Reporting, focusing on data collection
- Administrative Assistant (AA) for Documentation and Coordination, handling administrative tasks



EMP Cell structure

Roles and Responsibilities

Environmental Officer (EO)

- Develop, implement, and review EMP

- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide environmental training
- Manage environmental data collection
- Develop environmental policies
- Conduct site inspections
- Identify and mitigate environmental hazards
- Prepare quarterly reports

Environmental Assistant (EA)

- Conduct field monitoring
- Collect and record environmental data
- Assist in data analysis and reporting
- Maintain monitoring equipment
- Conduct site inspections
- Assist in preparing quarterly reports
- Update environmental records
- Assist in implementing mitigation measures
- Participate in training programs
- Provide support to EO

Administrative Assistant (AA)

- Maintain environmental records
- Coordinate documentation
- Assist in preparing quarterly reports
- Manage environmental documentation
- Provide administrative support
- Coordinate training logistics
- Maintain communication with regulatory authorities
- Assist in updating policies
- Manage environmental budget
- Provide general administrative support

Director/Top Management Responsibilities

- Provide strategic direction
- Approve environmental policies
- Allocate resources
- Review quarterly reports
- Ensure compliance
- Foster environmental responsibility
- Support employee training
- Review environmental investments
- Ensure integration of environmental considerations

EMP Process Flow

The EMP process flow includes:

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1. Environmental Monitoring
2. Data Analysis
3. Report Submission
4. Review and Revision
5. Implementation
6. Compliance Check

Key Decision Points

Key decision points include:

1. Non-compliance: Corrective action and Reporting
2. Environmental incidents: Investigation, Mitigation, and Reporting

Documentation

Documentation includes:

- EMP manual
- Monitoring records
- Reports
- Inspection records
- Training records

Implementation Timeline

The implementation timeline consists of:

1. Pre-Operational Phase (1 month): Establish EMP
2. Operational Phase (Ongoing): Implement EMP
3. Closure and Rehabilitation Phase (6 months): Restore mined land

Reporting

The EMP Cell will submit quarterly reports to:

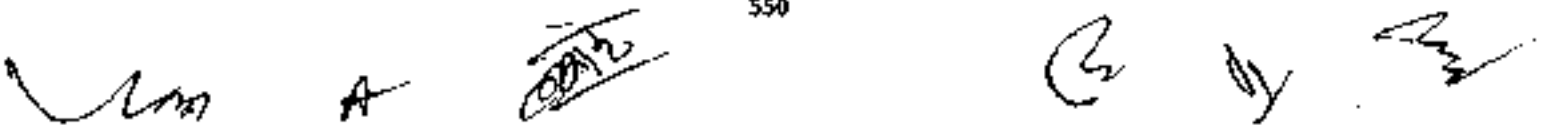
- Company Director
- Regulatory authorities

Conclusion

The EMP Cell is committed to ensuring environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. With a clear structure, roles, and responsibilities, the EMP Cell is equipped to manage environmental impacts and promote sustainable practices.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Salbona Pahar Stone Deposit of Shri Subham Keshri, Village : Salbona Pahar, Tehsil : Shikaripara, Distt.: Dumka, Jharkhand (2.94 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - II along with following specific conditions :

- I In compliance of DM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal



(<https://merillife.nic.in>).

- H. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PFT, Audiometry and other required tests. Summary findings of same to be submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

10. Manjhladih Stone Deposit of Shri Aman Singh, Village : Manjhladih, Thana : Shikaripara, Distt.: Dumka, Jharkhand (1.943 Ha).

(Proposal no.: SIA/JH/MIN/502055/2024)

Name of the consultant :Crystal Consultants, Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 24.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity - 78211.98 TPA/ 28967.40 Cum / Year.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Manjhladih Stone Deposit
2	Lessee:	Sri Aman Singh
3	Lessee Address	Sri Aman Singh Village - Jamugaria, P.O - Pratappur, P.S - Sikaripara, District - Dumka, Jharkhand
4	Lease Area	1.943 Ha Acres- 4.80 Acre
5	Type of Land	Non Forest Raiyati Land
6	Project Cost	Rs 16.137 Lakhs
7	EMP Budget	Capital: 6.137 Lakhs Recurring: 3.3895 / year
8	New or Expansion	New
9	Mineable Reserves	cum.: 139194.95 cum Tonnes: 375882.80 tonnes
10	Mine Life	5 years
11	Man power	18
12	Water Requirement	12.07 KLD (Drinking: 0.72 KLD, Industrial: 5.83 KLD, Plantation: 5.52 KLD)
13	Water Source	By authorised hired water tankers
14	DG Set / power	-
15	Crusher	No crusher
16	Nearest Water Body	Brahmani river is situated at a distance of 7.2 km in north direction.
17	Nearest Habitation	Sikaripara, at 6.5 KM in South-West direction.
18	Nearest Rail Station	Pakdaha Railway station, approx. 4.7 km towards North direction
19	Nearest Air Port	Deoghar Airport, approx. 90 km in west direction.
20	Nearest Forest	Kusumghati PF (3 Km), Kauwamahai PF (3.5 Km), Majhladih PF (2 Km), Dalda PF (3 Km)
21	Road & Highways	NH - 114A, Approx. 2.2 km towards North direction.

CO-ORDINATES

S. No.	Latitude	Longitude	S. No.	Latitude	Longitude
1	24°11' 39.937" N	87°34' 48.785" E	34	24°11' 49.550" N	87°34' 51.828" E

2	24°11' 40.163" N	87°34' 48.211" E	35	24°11' 49.613" N	87°34' 52.205" E
3	24°11' 40.341" N	87°34' 48.324" E	36	24°11' 49.160" N	87°34' 52.392" E
4	24°11' 41.082" N	87°34' 47.157" E	37	24°11' 49.272" N	87°34' 52.843" E
5	24°11' 41.391" N	87°34' 47.089" E	38	24°11' 49.524" N	87°34' 53.088" E
6	24°11' 41.599" N	87°34' 47.330" E	39	24°11' 49.122" N	87°34' 53.661" E
7	24°11' 42.260" N	87°34' 47.752" E	40	24°11' 49.282" N	87°34' 53.807" E
8	24°11' 42.287" N	87°34' 48.100" E	41	24°11' 49.215" N	87°34' 53.980" E
9	24°11' 42.696" N	87°34' 49.094" E	42	24°11' 49.041" N	87°34' 54.035" E
10	24°11' 43.381" N	87°34' 49.247" E	43	24°11' 49.001" N	87°34' 54.158" E
11	24°11' 43.981" N	87°34' 48.154" E	44	24°11' 49.077" N	87°34' 54.232" E
12	24°11' 44.510" N	87°34' 48.316" E	45	24°11' 48.907" N	87°34' 54.678" E
13	24°11' 44.534" N	87°34' 48.694" E	46	24°11' 48.927" N	87°34' 55.094" E
14	24°11' 44.905" N	87°34' 48.839" E	47	24°11' 48.683" N	87°34' 55.446" E
15	24°11' 44.977" N	87°34' 49.147" E	48	24°11' 48.354" N	87°34' 55.286" E
16	24°11' 44.602" N	87°34' 49.586" E	49	24°11' 48.653" N	87°34' 54.748" E
17	24°11' 44.462" N	87°34' 49.983" E	50	24°11' 47.723" N	87°34' 54.296" E
18	24°11' 44.783" N	87°34' 50.414" E	51	24°11' 47.894" N	87°34' 53.520" E
19	24°11' 45.026" N	87°34' 50.251" E	52	24°11' 47.015" N	87°34' 52.427" E
20	24°11' 45.262" N	87°34' 50.562" E	53	24°11' 46.426" N	87°34' 52.678" E
21	24°11' 45.169" N	87°34' 50.711" E	54	24°11' 45.562" N	87°34' 51.839" E
22	24°11' 45.185" N	87°34' 51.058" E	55	24°11' 45.285" N	87°34' 52.267" E
23	24°11' 45.649" N	87°34' 51.182" E	56	24°11' 44.870" N	87°34' 52.557" E
24	24°11' 45.902" N	87°34' 50.799" E	57	24°11' 44.586" N	87°34' 52.441" E
25	24°11' 46.079" N	87°34' 50.337" E	58	24°11' 44.319" N	87°34' 52.003" E
26	24°11' 46.714" N	87°34' 50.319" E	59	24°11' 43.733" N	87°34' 51.884" E
27	24°11' 46.643" N	87°34' 50.497" E	60	24°11' 43.618" N	87°34' 52.072" E
28	24°11' 46.715" N	87°34' 50.838" E	61	24°11' 43.150" N	87°34' 51.241" E
29	24°11' 47.535" N	87°34' 50.834" E	62	24°11' 42.412" N	87°34' 50.912" E
30	24°11' 47.325" N	87°34' 51.039" E	63	24°11' 41.262" N	87°34' 50.141" E
31	24°11' 47.618" N	87°34' 51.375" E	64	24°11' 40.661" N	87°34' 49.643" E
32	24°11' 48.253" N	87°34' 51.471" E	65	24°11' 40.497" N	87°34' 49.357" E
33	24°11' 49.132" N	87°34' 51.852" E			

LAND DETAILS:

Khata No.	Plot No.
21	1344(p)
36	1345, 1368
20	1369, 1372

STATUTORY CLEARANCES

1	LOI / Lease docs	: The Letter of Intent (LoI) has been issued by District Mining Officer, Dumka vide letter no. 969/M, dated 17.08.2024.
2	CO	: The CO, Shikaripara vide letter no. 636/Ra., dated 18.07.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.
3	DMO	: DMO, Dumka vide memo no. 876/M, dated 26.07.2024 certified that 01 other mining lease area (4.04 Acre) exists within 500 meters radius from proposed project site and total area is 8.84Acre.
4	DFO Wild Life	: DFO, Wildlife Division, Hazaribag vide letter no. 1261, dated 29.06.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	: Division Forest Officer, Dumka Forest Division vide letter no. 1235, dated 25.05.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	: This project is mentioned in approved OSR of Dumka District (Sl. no. 51, Page no. 159).
7	Gram Sabha	: Gram Sabha conducted on 03.04.2024.
8	Mine Plan Approval	: Approved by District Mining Officer, Dumka vide Letter No. 1131/M, dated 05.10.2024.
9	Qualified Person	: Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast other than fully mechanized (OTFM) Method	
2	Quarry Area	:	1.943 Ha / 4.80 Acres	Life of Mine – 5 years
3	Waste Generation	:	32699.05 cum	
4	Stripping Ratio	:	1:0.12	
5	Working Days	:	300	
6	Bench: size & No	:	6m to 6m	
7	Elevation of Mine	:	122 m AMSL to 148 m AMSL	
8	Ground Level Elevation	:	122 m AMSL to 148 m AMSL	
9	Ultimate Working Depth	:	110 m AMSL	
10	Water Table	:	94 m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	12.5 kg/day	
13	Diesel/Fuel requirement	:	400 litre/day	

Production Details

Year	Production of Stone in Cum	Production of Stone in Tonnes	Overburden in cum	Intercalated waste in Cum	Total Waste in Cum
1st	26540.15	71658.41	7553.00	1369.85	8949.85
2nd	26881.20	72579.24	7992.00	1414.80	9406.80
3rd	27838.80	75164.76	0.00	1465.20	1465.20
4th	28967.40	78211.98	9828.00	1524.60	11352.60
5th	28967.40	78211.98	0.00	1524.60	1524.60
Total	139194.95	375826.37	25373.00	7326.05	32699.05

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	Conceptual stage (Ha) (after life of mine)
Excavation	0.0	1.192	1.192 (0.126 Ha area shall be backfilled, 0.524 Ha area shall be converted water

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			reservoir and 0.542 Ha shall be left as dead benches).
Waste Dump	0.00	0.00 (waste dump to be removed and backfilled)	Nil (waste dump to be removed and backfilled)
Road	0.55	Comes under quarry	0.00
Infrastructure (Crusher)	0.0	0.00	0.00
Safety Zone	0.0	0.751	0.526
Total Area in Use	0.055	1.943	1.943
Unused Area	1.393	0.00	0.00
Total Applied Area	1.943	1.943	1.943

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Place of Plantation	Spacing b/w plants	Total No. of Plants	Area Cover in Square Meters	Total Area in Ha.	Species
1st	Safety Zone	2.5 x 2.5	1201	7510	0.751	Gulmohar, Gular, Sagwan, Sakua <u>Fruit Bearing Trees</u> Mango, Jackfruit, Guava
	Haul Road	3 x 3	178	1110	0.111	
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			1379	8620	0.862	

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Budget

PROPOSED FOR ENVIRONMENT MANAGEMENT COST			
S.NO.	Mitigative measures to protect Environment	Capital Cost (in Lakh)	Recurring cost (in Lakh)
01	Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine)	0.00	2.00
02.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @ No. of plants 1966 x 500Rs.	4.137	0.6895
03.	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	Nil	0.50
TOTAL		4.137	2.6895

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx in the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring. Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- The Boundary Pillars of the proposed mine lease area will be maintained properly.

- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gablon plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Solid Waste Management

During first, second, third and fourth year gritty soil & intercalated waste will be removed (31174.45 m^3) this soil and waste will be temporarily backfill within the exhausted quarry and in fifth year (1524.60 m^3) removed gritty soil, intercalated waste and existing temporary backfill soil will be backfilled within the lower bench of the exhausted quarry.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced
- Optimum quantity of explosives would be used.
- Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on Gaur road by using water Tankers.
- ✓ Regular repair of Haul road
- ✓ All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.

- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonators shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads

- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Organizational Structure:

Introduction

The Environmental Management Plan (EMP) Cell has been established to ensure environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. This project aims to minimize environmental harm, promote sustainable

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practices, ensure compliance with regulations, and foster community engagement and transparency. The EMP Cell will provide a framework for identifying, assessing, and mitigating potential environmental impacts associated with the mining activities.

Environmental Policy

Our company is committed to:

- Minimizing environmental harm through responsible mining practices
- Promoting sustainable practices to conserve natural resources
- Ensuring compliance with regulatory requirements and industry standards
- Fostering community engagement and transparency through open communication

EMP Cell Objectives

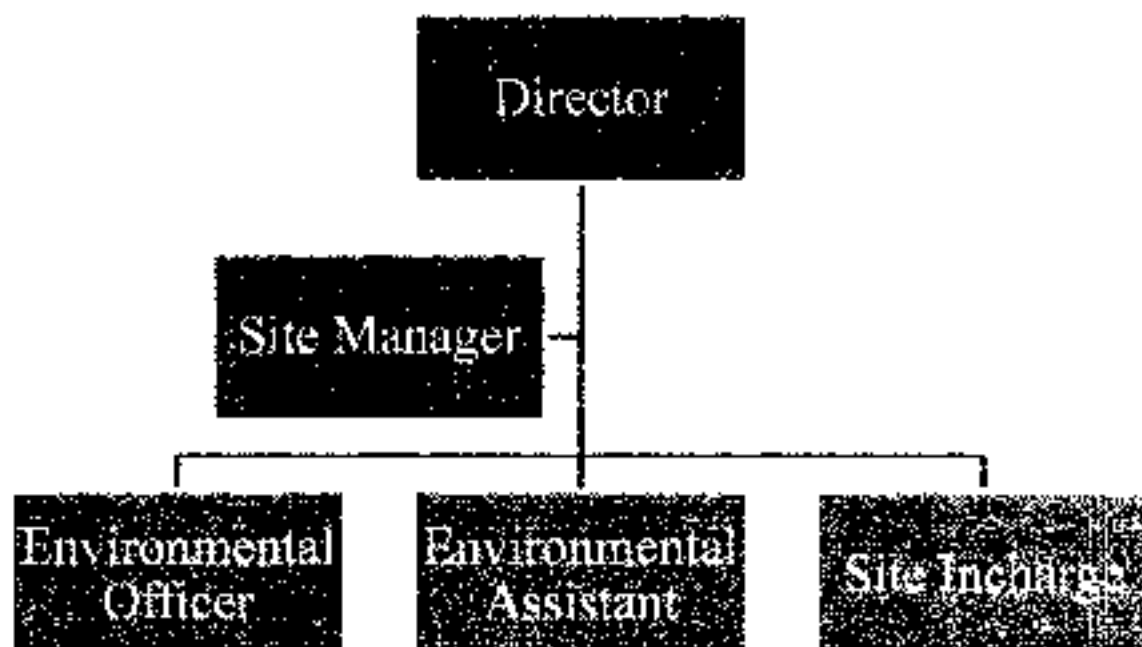
The EMP Cell objectives are:

- Minimize environmental impacts on air, water, soil, and biodiversity
- Ensure compliance with regulatory requirements and industry standards
- Promote sustainable practices through efficient resource utilization
- Enhance community engagement and transparency through regular updates

EMP Cell Structure

The EMP Cell consists of three members:

- Environmental Officer (EO) as Team Lead, responsible for overall strategy
- Environmental Assistant (EA) for Monitoring and Reporting, focusing on data collection
- Administrative Assistant (AA) for Documentation and Coordination, handling administrative tasks



EMP Cell structure

Roles and Responsibilities

Environmental Officer (EO)

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- Develop, implement, and review EMP
- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide environmental training
- Manage environmental data collection
- Develop environmental policies
- Conduct site inspections
- Identify and mitigate environmental hazards
- Prepare quarterly reports

Environmental Assistant (EA)

- Conduct field monitoring
- Collect and record environmental data
- Assist in data analysis and reporting
- Maintain monitoring equipment
- Conduct site inspections
- Assist in preparing quarterly reports
- Update environmental records
- Assist in implementing mitigation measures
- Participate in training programs
- Provide support to EO

Administrative Assistant (AA)

- Maintain environmental records
- Coordinate documentation
- Assist in preparing quarterly reports
- Manage environmental documentation
- Provide administrative support
- Coordinate training logistics
- Maintain communication with regulatory authorities
- Assist in updating policies
- Manage environmental budget
- Provide general administrative support

Director/Top Management Responsibilities

- Provide strategic direction
- Approve environmental policies
- Allocate resources
- Review quarterly reports
- Ensure compliance
- Foster environmental responsibility
- Support employee training
- Review environmental investments
- Ensure integration of environmental considerations

EMP Process Flow

UWA - A    

The EMP process flow includes:

1. Environmental Monitoring
2. Data Analysis
3. Report Submission
4. Review and Revision
5. Implementation
6. Compliance Check

Key Decision Points

Key decision points include:

1. Non-compliance: Corrective action and Reporting
2. Environmental incidents: Investigation, Mitigation, and Reporting

Documentation

Documentation includes:

- EMP manual
- Monitoring records
- Reports
- Inspection records
- Training records

Implementation Timeline

The implementation timeline consists of:

1. Pre-Operational Phase (1 month): Establish EMP
2. Operational Phase (Ongoing): Implement EMP
3. Closure and Rehabilitation Phase (6 months): Restore mined land

Reporting

The EMP Cell will submit quarterly reports to:

- Company Director
- Regulatory authorities

Conclusion

The EMP Cell is committed to ensuring environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. With a clear structure, roles, and responsibilities, the EMP Cell is equipped to manage environmental impacts and promote sustainable practices.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Manjhladih Stone Deposit of Shri Aman Singh, Village : Manjhladih, Thana : Shikaripara, Distt.: Dumka, Jharkhand (1.943 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

1. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal

[https://merilife.nic.in].

- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for Irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

11. Taldih Stone Deposit of M/s S.P. Stone Works (Partner : Shri Purushottam Sharan Prashant & Md. Salauddin), Village : Taldih, Thana : Pakuria, Distt. : Pakur, Jharkhand (1.893 Ha).

(Proposal No : SIA/JH/MIN/ 502117/2024)

Name of the consultant :Crystal Consultants, Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 24.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity – 139664.25 TPA/ 51727.50 Cum / Year.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Taldih Stone Deposit

2	Lessee:	M/s S.P. Stone Works, Partner - Shri Purushottam Sharan Prashant & Md. Salauddin
3	Lessee Address	Srikant Road, Belabagan, Denghar, Bharkhand
4	Lease Area	1.893 Ha Acres- 4.68 Acre
5	Type of Land	Non Forest Raiyati Land
6	Project Cost	Rs 15.537 Lakhs
7	EMP Budget	Capital: 5.537 Lakhs Recurring: 3.2895 lakhs / year
8	New or Expansion	New
9	Mineable Reserves	cum.: 262694 cum Tonnes: 709274 tonnes
10	Mine Life	9 years
11	Man power	18
12	Water Requirement	11.11 KLD (Drinking: 0.72 KLD, Industrial: 5.68 KLD, Plantation: 4.71 KLD)
13	Water Source	By authorised hired water tankers
14	DG Set / power	-
15	Crusher	No crusher
16	Nearest Water Body	Brahmani river is situated at a distance of 7.2 km in north direction.
17	Nearest Habitation	Pakuria, at 6.5 KM in South-West direction.
18	Nearest Rail Station	Pakdaha Railway station, approx. 11 km towards North direction
19	Nearest Air Port	Deoghar Airport, approx. 95 km west direction
20	Nearest Forest	Kusumghati PF (3 Km), Kauwamahal PF (3.5 Km), Majhladih PF (2 Km), Daldali PF (3 Km)
21	Road & Highways	NH - 114A, Approx. 5.65 km in North direction

CO-ORDINATES

S. No.	Latitude	Longitude	S. No.	Latitude	Longitude
1	24°17'00.12271"	87°35'08.95052"	28	24°16'57.53806"	87°35'13.43789"
2	24°17'00.24918"	87°35'09.31549"	29	24°16'57.24397"	87°35'12.06258"
3	24°17'00.98092"	87°35'10.16052"	30	24°16'57.21830"	87°35'11.58194"
4	24°17'01.10051"	87°35'10.52070"	31	24°16'57.84791"	87°35'11.36479"
5	24°17'01.37389"	87°35'11.00789"	32	24°16'57.93154"	87°35'11.09486"
6	24°17'01.50911"	87°35'11.38909"	33	24°16'57.71881"	87°35'10.29286"

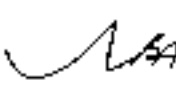
7	24°17'01.57657"	87°35'11.74229"	34	24°16'57.86429"	87°35'10.04201"
8	24°17'01.26053"	87°35'11.59818"	35	24°16'58.30176"	87°35'09.92764"
9	24°17'00.95791"	87°35'11.55174"	36	24°16'58.79356"	87°35'09.99748"
10	24°17'00.73050"	87°35'11.62579"	37	24°16'58.88370"	87°35'09.82518"
11	24°17'00.70228"	87°35'11.80586"	38	24°16'58.93277"	87°35'09.58891"
12	24°17'01.01263"	87°35'11.88467"	39	24°16'58.33751"	87°35'09.53509"
13	24°17'01.22438"	87°35'12.29860"	40	24°16'58.29233"	87°35'08.80138"
14	24°17'02.04947"	87°35'12.24751"	41	24°16'59.55928"	87°35'09.87263"
15	24°17'02.17831"	87°35'12.74363"	42	24°16'59.76181"	87°35'09.99744"
16	24°17'01.15109"	87°35'14.99136"	43	24°17'00.38580"	87°35'10.58593"
17	24°17'00.93937"	87°35'15.30283"	44	24°17'00.67391"	87°35'10.49035"
18	24°17'00.72978"	87°35'15.37984"	45	24°17'00.75610"	87°35'10.59587"
19	24°17'00.51436"	87°35'15.91192"	46	24°17'00.77698"	87°35'10.86666"
20	24°16'58.55700"	87°35'15.11689"	47	24°17'00.45730"	87°35'11.09144"
21	24°16'58.47481"	87°35'14.86547"	48	24°17'00.14554"	87°35'10.97970"
22	24°16'58.31116"	87°35'14.62020"	49	24°16'59.70468"	87°35'11.08655"
23	24°16'57.66316"	87°35'14.65246"			
24	24°16'57.54079"	87°35'14.26150"			
25	24°16'57.22792"	87°35'13.55284"			

LAND DETAILS

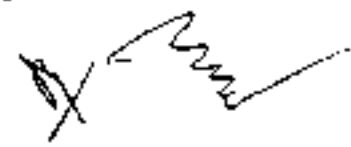
Khata no.	Plot no.
14	13
23	15

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 1660/M, dated 28.09.2024.
2	CO	:	The CO, Pakuria vide letter no. 239/Ra., dated 21.03.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khailyan & Register II and also mentioned that the habitation at a distance of 348 meters of proposed project site, accordingly PAs has submitted EMP for the same.







3	DMO	:	DMO, Pakur vide memo no. 1814/M, dated 19.10.2024 certified that Oilol (5.25 Acre) exists within 500 meters radius from proposed project site and total area is 9.93 Acre or 4.02 Ha.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 812, dated 27.04.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide letter no. 1525, dated 06.12.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 1815/M, dated 19.10.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 110, Page no. 139).
7	Gram Sabha	:	BCO, Pakuria vide letter no. 269/Vi., dated 02.03.2024 Informed that Gram Sabha conducted on 29.01.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 1803/M, dated 18.10.2024.
9	Qualified Person	:	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast other than fully mechanized (OTFM) Method	
2	Quarry Area	:	1.893 Ha / 4.68 Acres	Life of Mine – 9 years
3	Waste Generation	:	27303 cum	
4	Stripping Ratio	:	1:0.02	
5	Working Days	:	300	
6	Bench: size & No	:	6m to 6m	
7	Elevation of Mine	:	77 m AMSL to 89 m AMSL	
8	Ground Level Elevation	:	77 m AMSL to 89 m AMSL	
9	Ultimate Working Depth	:	45 m AMSL	
10	Water Table	:	15 m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	14.16 kg/day	
13	Diesel/Fuel requirement	:	400 litre/day	

Production Details

Year	Production of Stone in Cum	Production of Stone in Tonnes	Overburden in cum	Intercalated waste in Cum	Total Waste in Cum
1st	24444	65997	16120	1287	17407
2nd	25033	67588	310	1318	1628
3rd	25916	69973	3720	1364	5084
4th	27094	73154	0	1426	1426
5th	33426	90250	0	1759	1759
Total	135912	366962	20150	7153	27303

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	Conceptual stage (Ha) (after life of mine)
Excavation	0.00	0.779	1.156 (0.130 Ha area shall be backfilled, 0.710 Ha converted in to water reservoir and 0.316 Ha shall be left as dead benches)
Waste Dump	0.00	0.322	Nil (waste dump to be removed and backfilled)
Road	0.00	0.003	0.00
Infrastructure (Crusher)	0.0	0.00	0.00
Safety Zone	0.0	0.670	0.670
Total Area in Use	0.00	1.841	1.893
Unused Area	1.893	0.052	0.00
Total Applied Area	1.893	1.893	1.893

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Place of Plantation	Spacing b/w plants	Total No. of Plants	Area Cover in Square Meters	Total Area in Ha.	Species
1st	Safety Zone	2.5 x 2.5	1072	6700	0.670	Gulmohar, Gular, Sagwan, Sakua <u>Fruit Bearing Trees</u> Mango.
	Haul Road	3 x 3	108	670	0.067	
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	

Sth	Care & Protection	---	---	---	---	Jackfruit, Guava
Total			1179	7370	0.737	

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Budget

PROPOSED FOR ENVIRONMENT MANAGEMENT COST			
S.NO.	Mitigative measures to protect Environment	Capital Cost (in Lakh)	Recurring cost (in Lakh)
01.	Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine)	0.00	2.00
02.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @ No. of plants 1966 x 500Rs.	4.47	0.745
03	Garland Drain and Desiltation pond	2.00	0.20
04.	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	Nil	0.50
TOTAL		6.47	3.445

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx in the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly

2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- The Boundary Pillars of the proposed mine lease area will be maintained properly.
- One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- If any tree felling than necessary permission shall be taken from the competent authority.
- Slope of the Water bodies to be stabilized using gablon plantation created at the end of life of the mine.
- Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Solid Waste Management

During first, second, third and fourth year gritty soil & intercalated waste will be removed (25545 m³) this soil and waste will be temporarily backfill within the exhausted quarry and in fifth year (1759 m³) removed gritty soil, intercalated waste and existing temporary backfill soil will be backfilled within the lower bench of the exhausted quarry.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced
- Optimum quantity of explosives would be used.
- Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on Gaur road by using water Tankers.
- ✓ Regular repair of Haul road
- ✓ All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5

2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the

face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonators shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.

- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Organizational Structure:

Introduction

The Environmental Management Plan (EMP) Cell has been established to ensure environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. This project aims to minimize environmental harm, promote sustainable practices, ensure compliance with regulations, and foster community engagement and transparency. The EMP Cell will provide a framework for identifying, assessing, and mitigating potential environmental impacts associated with the mining activities.

Environmental Policy

Our company is committed to:

- Minimizing environmental harm through responsible mining practices
- Promoting sustainable practices to conserve natural resources
- Ensuring compliance with regulatory requirements and industry standards
- Fostering community engagement and transparency through open communication

EMP Cell Objectives

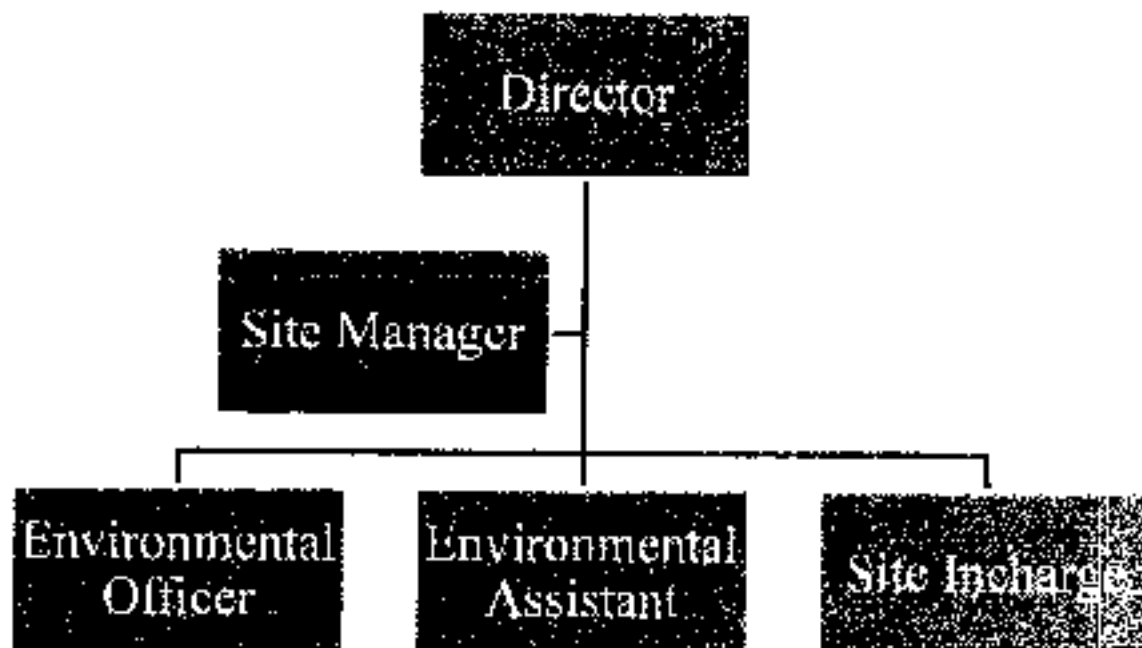
The EMP Cell objectives are:

- Minimize environmental impacts on air, water, soil, and biodiversity
- Ensure compliance with regulatory requirements and industry standards
- Promote sustainable practices through efficient resource utilization
- Enhance community engagement and transparency through regular updates

EMP Cell Structure

The EMP Cell consists of three members:

- Environmental Officer (EO) as Team Lead, responsible for overall strategy
- Environmental Assistant (EA) for Monitoring and Reporting, focusing on data collection
- Administrative Assistant (AA) for Documentation and Coordination, handling administrative tasks



EMP Cell structure

Roles and Responsibilities

Environmental Officer (EO)

- Develop, implement, and review EMP
- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide environmental training
- Manage environmental data collection
- Develop environmental policies
- Conduct site inspections
- Identify and mitigate environmental hazards
- Prepare quarterly reports

Environmental Assistant (EA)

- Conduct field monitoring
- Collect and record environmental data
- Assist in data analysis and reporting
- Maintain monitoring equipment
- Conduct site inspections
- Assist in preparing quarterly reports
- Update environmental records
- Assist in implementing mitigation measures
- Participate in training programs
- Provide support to EO

Administrative Assistant (AA)

- Maintain environmental records
- Coordinate documentation

- Assist in preparing quarterly reports
- Manage environmental documentation
- Provide administrative support
- Coordinate training logistics
- Maintain communication with regulatory authorities
- Assist in updating policies
- Manage environmental budget
- Provide general administrative support

Director/Top Management Responsibilities

- Provide strategic direction
- Approve environmental policies
- Allocate resources
- Review quarterly reports
- Ensure compliance
- Foster environmental responsibility
- Support employee training
- Review environmental investments
- Ensure integration of environmental considerations

EMP Process Flow

The EMP process flow includes:

1. Environmental Monitoring
2. Data Analysis
3. Report Submission
4. Review and Revision
5. Implementation
6. Compliance Check

Key Decision Points

Key decision points include:

1. Non-compliance: Corrective action and Reporting
2. Environmental incidents: Investigation, Mitigation, and Reporting

Documentation

Documentation includes:

- EMP manual
- Monitoring records
- Reports
- Inspection records
- Training records

Implementation Timeline

The implementation timeline consists of:

1. Pre-Operational Phase (1 month): Establish EMP
2. Operational Phase (Ongoing): Implement EMP
3. Closure and Rehabilitation Phase (6 months): Restore mined land

Reporting

The EMP Cell will submit quarterly reports to:

- Company Director

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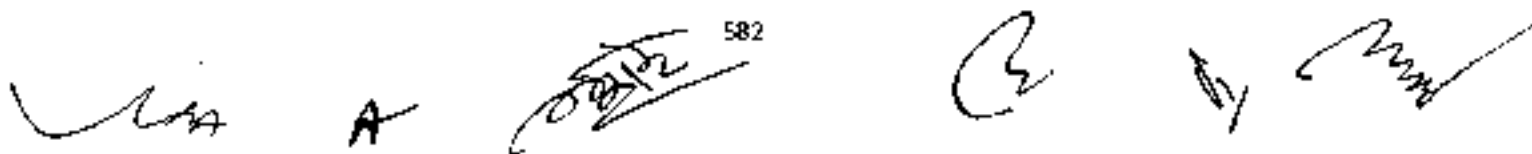
- Regulatory authorities

Conclusion

The EMP Cell is committed to ensuring environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. With a clear structure, roles, and responsibilities, the EMP Cell is equipped to manage environmental impacts and promote sustainable practices

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Taldih Stone Deposit of M/s S.P. Stone Works (Partner : Shri Purushottam Sharan Prashant & Md. Salauddin), Village : Taldih, Thana : Pakuria, Distt. : Pakur, Jharkhand (1.893 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Mo Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of Terms & conditions mentioned in EC can lead to revocation / cancellation of EC.



12. Taldih Stone Deposit of M/s Viraj Engicon Pvt. Ltd., Village : Taldih, Thana : Pakuria, Distt. : Pakur, Jharkhand (2.125 Ha).

(Proposal No : SIA/JH/MIN/ 502121/2024)

Name of the consultant : Crystal Consultants, Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 24.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity – 142742.30 TPA/ 52867.50 Cum/Year

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Taldih Stone Deposit
2	Lessee:	: M/s Viraj Engicon Pvt. Ltd., Director - 1. Sri Ajit Kumar Singh 2. Sri Ravi Shankar Kumar 3. Sri Purshottam Saran Prasant
3	Lessee Address	: Village - Narodih, P.O + P.S – Chakal, District – Jamui, Bihar
4	Lease Area	: 2.125 Ha Acres- 5.25 Acre
5	Type of Land	: Non Forest Raiyati Land
6	Project Cost	: Rs 15.825 Lakhs
7	EMP Budget	: Capital: 5.825 Lakhs Recurring: 3.3375 lakhs / year
8	New or Expansion	: New
9	Mineable Reserves	: cum.: 529038.85 cum Tonnes: 1428404.90 tonnes
10	Mine Life	: 10 years
11	Man power	: 18
12	Water Requirement	: 11.11 KLD (Drinking: 0.72 KLD, Industrial: 6.37 KLD, Plantation: 5.10 KLD)
13	Water Source	: By authorised hired water tankers
14	DG Set / power	: -
15	Crusher	: No crusher
16	Nearest Water Body	: Brahmani river is situated at a distance of 7.2 km in north direction.
17	Nearest Habitation	: Pakuria, at 6.5 KM in South-West direction.
18	Nearest Rail Station	: Pakdaha Railway station, approx. 11 km towards North direction
19	Nearest Air Port	: Deoghar Airport, approx. 95 km west direction

20	Nearest Forest	Kusumghati PF (3 Km), Kauwamahat PF (3.5 Km), Majhiadli PF (2 Km), Daldali PF (3 Km)
21	Road & Highways	NH – 114A, Approx. 5.65 km in North direction

CO-ORDINATES

S. No.	Latitude	Longitude	S. No.	Latitude	Longitude
1	24°16'57.21830"	87°35'11.58194"	30	24°16'52.61570"	87°35'12.54746"
2	24°16'57.24397"	87°35'12.06258"	31	24°16'53.00285"	87°35'12.53983"
3	24°16'55.49639"	87°35'13.07969"	32	24°16'53.11880"	87°35'12.59200"
4	24°16'55.04761"	87°35'13.45301"	33	24°16'53.20099"	87°35'12.47039"
5	24°16'55.20464"	87°35'13.77938"	34	24°16'53.25755"	87°35'12.30169"
6	24°16'55.22970"	87°35'13.97659"	35	24°16'53.24761"	87°35'11.75546"
7	24°16'55.15100"	87°35'14.30473"	36	24°16'52.63223"	87°35'10.71654"
8	24°16'54.30788"	87°35'14.32432"	37	24°16'52.37735"	87°35'10.78292"
9	24°16'53.71918"	87°35'14.17142"	38	24°16'52.11509"	87°35'10.97693"
10	24°16'53.51322"	87°35'14.03909"	39	24°16'51.83252"	87°35'11.07323"
11	24°16'53.49072"	87°35'14.29706"	40	24°16'51.69497"	87°35'11.05760"
12	24°16'53.24948"	87°35'14.38984"	41	24°16'51.49852"	87°35'10.24584"
13	24°16'52.99133"	87°35'14.41208"	42	24°16'51.47882"	87°35'09.99046"
14	24°16'52.85813"	87°35'14.37396"	43	24°16'51.65180"	87°35'09.75851"
15	24°16'52.82029"	87°35'14.14853"	44	24°16'52.16207"	87°35'09.38630"
16	24°16'52.66171"	87°35'14.00233"	45	24°16'52.24678"	87°35'08.83860"
17	24°16'52.57106"	87°35'14.08639"	46	24°16'52.15796"	87°35'08.66551"
18	24°16'52.52300"	87°35'14.27856"	47	24°16'51.96886"	87°35'08.63088"
19	24°16'52.55692"	87°35'14.41010"	48	24°16'51.92198"	87°35'08.29280"
20	24°16'51.79138"	87°35'14.37842"	49	24°16'53.54278"	87°35'08.38572"
21	24°16'50.55892"	87°35'13.85657"	50	24°16'54.18257"	87°35'08.44872"
22	24°16'50.54689"	87°35'13.62660"	51	24°16'56.22510"	87°35'08.60215"
23	24°16'50.60359"	87°35'13.42507"	52	24°16'55.75408"	87°35'08.94912"
24	24°16'50.90156"	87°35'13.12613"	53	24°16'56.16167"	87°35'10.03409"
25	24°16'51.03156"	87°35'12.87802"	54	24°16'56.50000"	87°35'10.93466"

26	24°16'51.16962"	87°35'12.76134"	55	24°16'56.76359"	87°35'10.85140"
27	24°16'51.38839"	87°35'12.92190"	56	24°16'56.88163"	87°35'11.02088"
28	24°16'51.91342"	87°35'12.85393"	57	24°16'57.00950"	87°35'11.31990"
29	24°16'52.48618"	87°35'12.67357"			

LAND DETAILS:

Khata No.	Plot No.
19	18, 30, 31, 32, 33
18	19, 20, 21, 24, 25
23	26

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 1662/M, dated 28.09.2024.
2	CO	:	The CO, Pakuria vide letter no. 240/Ra., dated 21.03.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khathyan & Register II and also mentioned that the habitation at a distance of 480meters of proposed project site, accordingly PAs has submitted EMP for the same.
3	DMO	:	DMO, Pakur vide memo no. 1810/M, dated 18.10.2024 certified that 01 LoI (4.68 Acre) exists within 500 meters radius from proposed project site and total area is 9.93 Acre or 4.02 Ha.
4	DFO Wild Life	:	DFO -cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 817, dated 27.04.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide letter no. 1527, dated 06.12.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 1811/M, dated 18.10.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 110, Page no. 139).
7	Gram Sabha	:	BDO, Pakuria vide letter no. 268/Vi., dated 02.03.2024 informed that Gram Sabha conducted on 29.01.2024.

8	Mine Plan Approval	: Approved by District Mining Officer, Pakur vide Memo No. 1804/M, dated 18.10.2024.
9	Qualified Person	: Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast other than fully mechanized (OTFM) Method	
2	Quarry Area	:	2.125 Ha / 5.25 Acres	Life of Mine – 10 years
3	Waste Generation	:	46560.50 cum	
4	Stripping Ratio	:	1:0.02	
5	Working Days	:	300	
6	Benches: size & No	:	6m to 6m	
7	Elevation of Mine	:	81 m AMSL to 74 m AMSL	
8	Ground Level Elevation	:	81 m AMSL to 74 m AMSL	
9	Ultimate Working Depth	:	30 m AMSL	
10	Water Table	:	15 m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	22.5 kg/day	
13	Diesel/Fuel requirement	:	400 litre/day	

Production Details

Year	Production of Stone in Cum	Production of Stone in Tonnes	Overburden in cum	Intercalated waste in Cum	Total Waste in Cum
1st	52061.90	140567.13	32754.00	2740.10	35494.10
2nd	52263.30	141110.91	0.00	2750.70	2750.70
3rd	52364.00	141382.80	0.00	2756.00	2756.00
4th	52766.80	142470.36	0	2777.20	2777.20
5th	52867.5	142742.3	0.00	2782.50	2782.50
Total	262323.50	708273.45	32754.00	13806.5	46560.50

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan period (Ha)	Conceptual stage (Ha) (after life of mine)
Excavation	0.00	0.830	1.150 (0.334 Ha area shall be backfilled, 0.890 Ha converted in to water reservoir and 0.316 Ha shall be left as dead benches)
Waste Dump	0.00	0.335	Nil (waste dump to be removed and backfilled)
Road	0.00	0.004	0.00
Infrastructure (Crusher)	0.0	0.00	0.00
Safety Zone	0.0	0.585	0.585
Total Area in Use	0.00	1.775	2.125
Unused Area	2.125	0.371	0.00
Total Applied Area	2.125	2.125	2.125

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Place of Plantation	Spacing b/w plants	Total No. of Plants	Area Cover in Square Meters	Total Area in Ha.	Species
1st	Safety Zone	2.5 x 2.5	936	5850	0.585	Guilmohar, Gular, Sagwan, Sakua <u>Fruit Bearing Trees</u> Mango, Jackfruit, Guava
	Haul Road	3 x 3	339	2120	0.212	
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			1275	7370	0.737	

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Budget

PROPOSED FOR ENVIRONMENT MANAGEMENT COST			
S.NO.	Mitigative measures to protect Environment	Capital Cost (in lakh)	Recurring cost (In Lakh)
01.	Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine)	0.00	2.00
02.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @ No. of plants 1966 x 500Rs.	3.825	0.6375
03.	Garland Drain and Desiltation pond	2.00	0.20
04.	Environment Monitoring (Air, Water, Noise & Soil Monitoring)	Nil	0.50
TOTAL		5.825	3.3375

Environment Monitoring Plan (post operation)**Monitoring Parameters and Frequency of Monitoring**

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx in the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.

- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Solid Waste Management

During first, second, third and fourth year gritty soil & intercalated waste will be removed (43778 m³) this soil and waste will be temporarily backfill within the exhausted quarry and in fifth year (2782.5 m³) removed gritty soil, intercalated waste and existing temporary backfill soil will be backfilled within the lower bench of the exhausted quarry.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

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Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced
- Optimum quantity of explosives would be used.
- Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on Gaur road by using water Tankers.
- ✓ Regular repair of Haul road
- ✓ All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

The hazard identification and risk analysis are done using qualitative method:

Hazard identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20

7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: - *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created.
- Loose sides are properly dressed.
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961).
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.

- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation.
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement.
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling. Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground. Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.

- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department.

Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine.
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers.
- Explosives and detonators shall not be carried in the same container.
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

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Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required).
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Organizational Structure:

Introduction

The Environmental Management Plan (EMP) Cell has been established to ensure environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. This project aims to minimize environmental harm, promote sustainable practices, ensure compliance with regulations, and foster community engagement and transparency. The EMP Cell will provide a framework for identifying, assessing, and mitigating potential environmental impacts associated with the mining activities.

Environmental Policy

Our company is committed to:

- Minimizing environmental harm through responsible mining practices
- Promoting sustainable practices to conserve natural resources
- Ensuring compliance with regulatory requirements and industry standards
- Fostering community engagement and transparency through open communication

EMP Cell Objectives

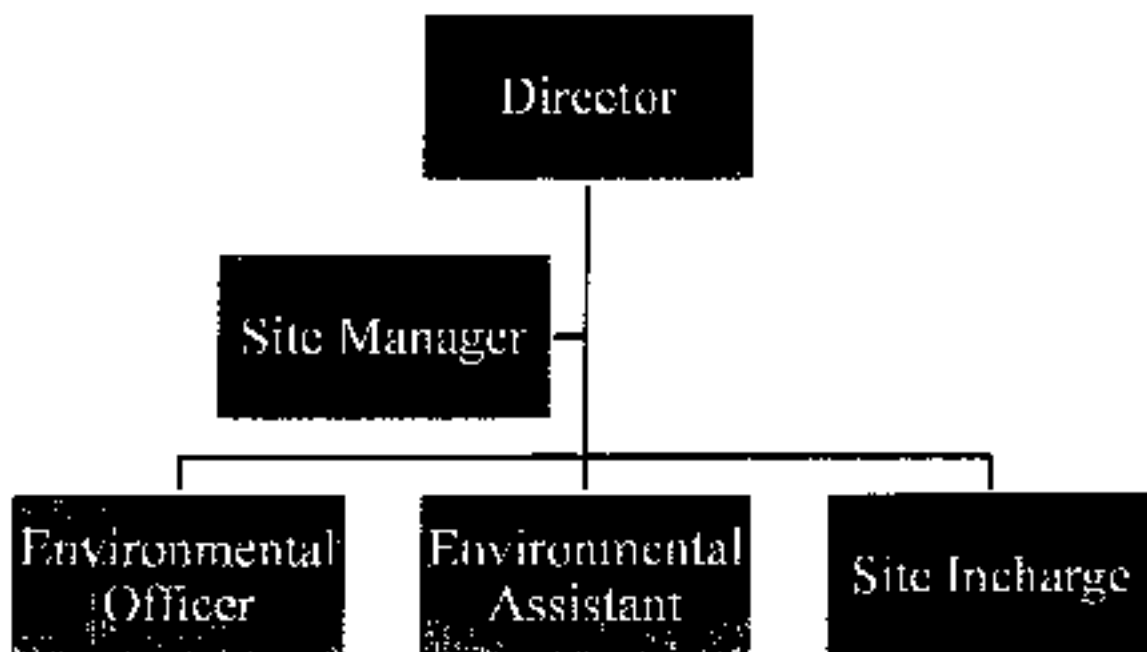
The EMP Cell objectives are:

- Minimize environmental impacts on air, water, soil, and biodiversity
- Ensure compliance with regulatory requirements and industry standards
- Promote sustainable practices through efficient resource utilization
- Enhance community engagement and transparency through regular updates

EMP Cell Structure

The EMP Cell consists of three members:

- Environmental Officer (EO) as Team Lead, responsible for overall strategy
- Environmental Assistant (EA) for Monitoring and Reporting, focusing on data collection
- Administrative Assistant (AA) for Documentation and Coordination, handling administrative tasks



EMP Cell structure

Roles and Responsibilities

Environmental Officer (EO)

- Develop, implement, and review EMP
- Conduct environmental impact assessments
- Monitor and report environmental performance
- Coordinate with regulatory authorities
- Provide environmental training
- Manage environmental data collection
- Develop environmental policies
- Conduct site inspections
- Identify and mitigate environmental hazards
- Prepare quarterly reports

Environmental Assistant (EA)

- Conduct field monitoring
- Collect and record environmental data
- Assist in data analysis and reporting
- Maintain monitoring equipment
- Conduct site inspections
- Assist in preparing quarterly reports
- Update environmental records
- Assist in implementing mitigation measures
- Participate in training programs
- Provide support to EO

Administrative Assistant (AA)

- Maintain environmental records
- Coordinate documentation
- Assist in preparing quarterly reports
- Manage environmental documentation
- Provide administrative support
- Coordinate training logistics
- Maintain communication with regulatory authorities
- Assist in updating policies
- Manage environmental budget
- Provide general administrative support

Director/Top Management Responsibilities

- Provide strategic direction
- Approve environmental policies

- Allocate resources
- Review quarterly reports
- Ensure compliance
- Foster environmental responsibility
- Support employee training
- Review environmental investments
- Ensure integration of environmental considerations

EMP Process Flow

The EMP process flow includes:

1. Environmental Monitoring
2. Data Analysis
3. Report Submission
4. Review and Revision
5. Implementation
6. Compliance Check

Key Decision Points

Key decision points include:

1. Non-compliance: Corrective action and Reporting
2. Environmental incidents: Investigation, Mitigation, and Reporting

Documentation

Documentation includes:

- EMP manual
- Monitoring records
- Reports
- Inspection records
- Training records

Implementation Timeline

The implementation timeline consists of:

1. Pre-Operational Phase (1 month): Establish EMP
2. Operational Phase (Ongoing): Implement EMP
3. Closure and Rehabilitation Phase (6 months): Restore mined land

Reporting

The EMP Cell will submit quarterly reports to:

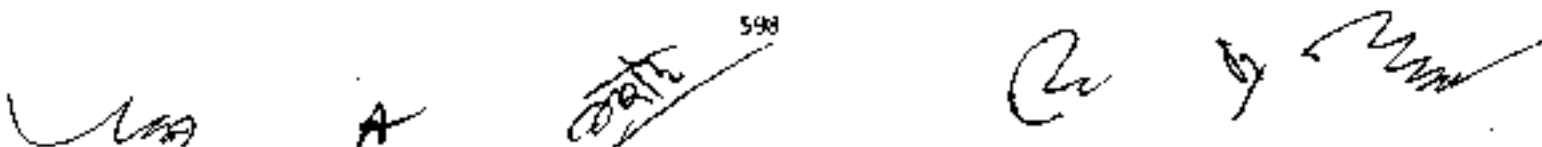
- Company Director
- Regulatory authorities

Conclusion

The EMP Cell is committed to ensuring environmental sustainability and compliance with regulatory requirements for the Stone Mining Project. With a clear structure, roles, and responsibilities, the EMP Cell is equipped to manage environmental impacts and promote sustainable practices

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Taldih Stone Deposit of M/s Viraj Engicon Pvt. Ltd., Village : Taldih, Thana : Pakuria, Distt. : Pakur, Jharkhand (2.125 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests. Summary findings of same to be submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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**13. Bethat Brick Clay Deposit of M/s New Kanak Bricks (Prop. : Shri Nandkishore Prasad Sahu),
Village : Bethat, Thana : Kisko, Distt. : Lohardaga, Jharkhand (1.56 Ha).**

(Proposal No : STA/JH/MIN/ 501968/2024)

Name of the consultant :P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 24.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 1500 cum soil/Season or 1950 tons/season.

Project and location details:

Sl	Parameter	Details
1.	Project Name	: Bethat Brick Clay Deposit
2.	Lessee:	: M/s New Kanak Bricks Prop. - Sri Nandkishore Prasad Sahu S/o - Sri Radha Prasad Sahu
3.	Lease Address	: Village- Bethat, Thana- Kisko, District- Lohardaga, State- Jharkhand
4.	Lease Area	: 1.56 ha Acres-3.68 Acres
5.	Type of Land	: Non Forest - Raiyati Land
6.	Project Cost	: Rs. 30 Lakhs
7.	EMP Budget	: Capital: 9.025 Lakh Recurring: 4.87 Lakh / year
8.	New or Expansion	: New
9.	Mineable Reserves	: Cum.: 19892.00 Cum Tonnes: 25859.6tonnes
10.	Mine Life	: 13.26 seasons
11.	Man power	: 50
12.	Water Requirement	: 7.40 KLD (Drinking: 0.50 KLD, Dust Suppression: 3.69 KLD, Plantation: 3.21 KLD)
13.	Water Source	: From Nearby villages by tankers
14.	DG Set /power	: -
15.	Crusher	: No crusher
16.	Nearest Water Body	: Sukri River Approx 6.63 Km towards ENE direction.
17.	Nearest Habitation	: Approx. 0.44 km towards SSW direction.
18.	Nearest Rail Station	: Lohardaga Railway Station at a distance of approx. 7.25 km towards ESE direction from site
19.	Nearest Airport	: Birsa Munda Airport, Ranchi at a distance of 72.50 km in ESE direction from site

20	Nearest Forest	:	Protected forest, Approx 2.15km towards W direction Protected forest, Approx 3.10 km towards WSW direction
21	Road & Highways	:	NH-143 A, approx, 5.50 km towards SE direction.

CO-ORDINATES

1	Latitude	:	From 23°27'54.14"N	To 23°27'58.01"N
2	Longitude	:	From 84°38'16.07"E	To 84°38'21.06"E

LAND DETAILS

Khata no.	Plot no.
50, 114 & 207	587, 588, 589 (P) & 590 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Land agreement made.
2	CO	:	The CD, Kisko (Lohardaga) vide letter no. 502, dated 09.09.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khallian.
3	DMO	:	DMO, Lohardaga vide memo no. 778/M, dated 18.10.2023 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Ranchi vide letter no. 772, dated 12.09.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palakot Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Lohardaga Forest Division vide letter no. 1686, dated 25.09.2024 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved District Survey Report (DSR) of Lohardaga District (Sl. no. 49, Page no. 31).
7	Gram Sabha	:	BDO, Kisko (Lohardaga) vide letter no. 728, Dated 11.09.2024 informed that Gram Sabha conducted on 21.08.2024.
8	Mine Plan Approval	:	Approved by DMD, Lohardaga vide Memo No. 774/M, dated 17.10.2024.

9	Qualified Person	:	Shri Tapan Kumar Chakravarty was confirm through email dated 24.10.2024 that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Manual Mining method	
2	Quarry Area	:	1.56 ha	Life of Mine – 13.26 Seasons
3	Waste Generation	:	0.0 Cu.m	
4	Stripping Ratio	:	01:00	
5	Working Days	:	150	
6	Benches: size & No	:	--	
7	Elevation of Mine	:	690 AMSL to 691 AMSL	
8	Ground Level Elevation	:	690 AMSL	
9	Ultimate Working Depth	:	688 AMSL (2 mbgl)	
10	Water Table	:	677 - 675 AMSL (13 - 15 mbgl)	
11	Topography of Mine	:	Area represents flat topography	
12	Explosive Requirement	:	--	
13	Diesel/Fuel requirement	:	—	

Production Details

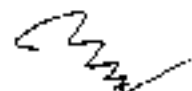
Total excavation of brick earth in cum/season	Number of bricks/season	Total excavation of brick earth
		MT=Cum x 1.3
1500.00	600000	1950.00
1500.00	600000	1950.00
1500.00	600000	1950.00
1500.00	600000	1950.00
1500.00	600000	1950.00

Land Use

Pattern of Utilization	Existing (ha.)	At the end of Plan Period (ha.)
Quarrying	Nil	0.37
Storage of casted bricks	Nil	comes under excavation
Safety Zone	Nil	0.33





		(Plantation)
Road	0.01	comes under excavation
Unused Area	0.01	0.70
Balanced Area	1.55	0.86
Total Applied Area	1.56	1.56

ENVIRONMENT MANAGEMENT

Green Belt Development

S.No.	LOCATION	Area/Length	No of Trees
1	Safety Zone	0.33ha	825
2	Haul /Approach Road	340m	680
3	No. of Plants distributed in Anganwadi, Panchayat Bhawan or in schools	--	100

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Plan

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	14,000 8,000 8,000 7,000
3	Plantation	8,02,000	1,00,000
4	Construction and maintenance of haul-road	1,00,000	1,50,000
TOTAL		9,02,000	4,87,000

Note: *1605 plants * 500 Rs (for each plants including hedges) = 8.025 lakhs

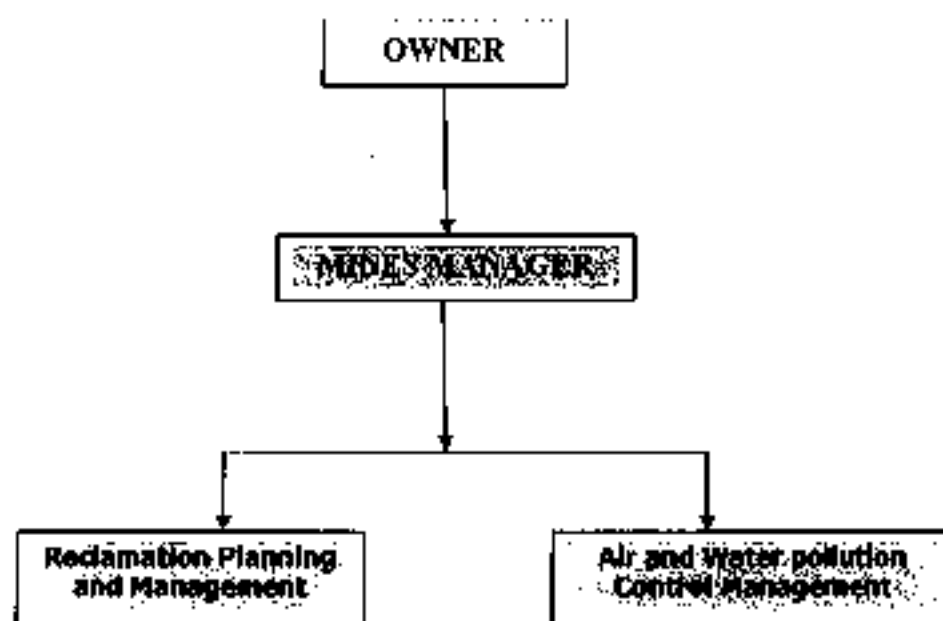
Salary of Labor for haul road maintenance 2 labor*150 =300 per day

300* 300 = 90,000/- or 1,50,000/- (including maintenance)

* 2.5 lakh per kilometer (250000 * 0.34 km haul road) = 85,000/- or 1, 00,000/-

Environment Monitoring Programme

S. No.	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly



Organization Structure

Solid Waste Management

There is no generation of waste.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- It shall be ensured that quality of drinking water for the worker is hygienic and goodsanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road' shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice.
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSOCIATED WITH PROJECT ACTIVITIES AND THEIR MITIGATION MEASURES ARE DISCUSSED BELOW:

Road accidents

Transportation of sand along the public road may cause accident which may cause injury.

Preventive Measures;

1. Ensure speed limit for the haulage vehicle for 40 KMPH.
2. Regular maintenance of haulage road
3. Appropriate navigational signs informing sensitive area like school and habitation
4. Regular maintenance of the vehicles.

Dust generation

- No drilling involved
- Dust mass would be supplied to workers.
- Regular sprinkling of water on road

Noise Generation

Source of noise pollution in the project would be movement of tippers / tractors transporting sand from mine to stock yard. In general tippers / tractors produce a noise level of 75 - 90 (A) measured at distance of 3m from the source.

Preventive measures

- Transportation activities would be confined during day time only.
- There would be a speed limit of 40 kmph for tippers. Higher is speed higher is noise.
- Regular repair and maintenance of tippers/tractors.
- Plantation on both sides of haulage road.
- Tippers having PUC certified will be allowed to be used for sand transportation.

Health Hazards

During digging and handling of sand i.e. loading, transportation and unloading of sand, workmen would be exposed to inhalation of fine dust particles. This poses a health hazard.

Measures

Following mitigation measures would be taken to minimize this impact on health

- Regular water sprinkling on haulage roads
- Tree plantation on both sides of haulage road

- Tippers / Tractors carrying sand would be covered
- Mask would be provided to workmen employed for digging, loading, transportation and unloading activities

Accident at Site

This is a project with only source of accident at site would be movement of tippers /tractors within mine site for transportation of sand.

Preventive measures

Following mitigation measures would be taken to minimize risk of road accident:

- Separate alignment for movement of loaded vehicles coming out of mine site
- Ensure speed restriction of 10 KMPH within mine site for Incoming and outgoing tippers
- Regular maintenance and repair of haulage vehicles employed for sand transportation
- No overtaking of transportation vehicles within mine site
- Proper maintenance of haulage roads

Transportation

The usual method of transporting minerals from the working face is by tractor. Large earth moving equipment's are not used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road/approach road shall be made smooth regularly with a road roller.
- Mine road/approach road will be cleaned daily for smooth transportation.
- Mine road/approach road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.

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- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Bethat Brick Clay Deposit of M/s New Kanak Bricks (Prop. : Shri Nandkishore Prasad Sahu), Village : Bethat, Thana : Kisko, Distt. : Lohardaga, Jharkhand (1.56 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Mo Ke Noom" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

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**14. Burka Brick Clay Deposit of M/s Bedal Bricks (Partners : Shri Krishna Prasad & Others),
Village : Burka, Thana : Bhandra, Distt. : Lohardaga, Jharkhand (1.01 Ha).**

(Proposal No : SIA/JH/MIN/ 501993/2024)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 24.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 1500cum soil/Season or 1950 tons/season.

PROJECT and LOCATION Details:

Sl	Parameter	Details
1.	Project Name	Burka Brick Clay Deposit
2.	Lessee:	M/S Bedal Bricks Partners. - Sri Krishna Prasad & Others
3.	Lease Address	Village- Burka, Thana- Bhandra, District- Lohardaga, State- Jharkhand
4.	Lease Area	1.01 ha Acres- 2.50 Acres
5.	Type of Land	Non Forest – Raiyati Land
6.	Project Cost	Rs. 30 Lakhs
7.	EMP Budget	Capital: 12.75 Lakh Recurring: 4.87 Lakh / year
8.	New or Expansion	New
9.	Mineable Reserves	Cum.: 12266.00 Cum Tonnes: 15945.8 tonnes
10.	Mine Life	8.17 seasons
11.	Man power	51
12.	Water Requirement	10.51 ~ 10.60 KLD (Drinking: 0.51 KLD, Dust Suppression: 5.5 KLD, Plantation: 4.5 KLD)
13.	Water Source	From Nearby villages by tankers
14.	DG Set /power	-
15.	Crusher	No crusher
16.	Nearest Water Body	South Koel River Approx 5.42Km towards NW direction.
17.	Nearest Habitation	Approx. 0.56 km towards NNE direction.
18.	Nearest Rail Station	Lohardaga Railway Station at a distance of 12.89 km towards NNW direction from site.
19.	Nearest Airport	Birsa Munda Airport, Ranchi at a distance of 59.19 km in East direction from mine site.
20.	Nearest Forest	Protected forest, Approx 3.90 km towards NW direction

21	Road & Highways	NH-143 AG, approx. 4.11 km towards North direction.

CO-ORDINATES

1	Latitude	From 23°19'59.11"N	To 23°19'04.90"N
2	Longitude	From 84°44'45.03"E	To 84°44'48.67"E

LAND DETAILS

Khata no.	Plot no.
144	536 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	: Land agreement made.
2	CO	: The CO, Bhandra (Lohardaga) vide letter no. 499, dated 19.09.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyar.
3	DMO	: DMO, Lohardaga vide memo no. 779/M, dated 18.10.2023 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	: DFO, Wildlife Division, Ranchi vide letter no. 771, dated 12.09.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Territorial	: Division Forest Officer, Lohardaga Forest Division vide letter no. 1687, dated 25.09.2024 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	: This project is mentioned in approved District Survey Report (DSR) of Lohardaga District (Sl. no. 60, Page no. 33).
7	Gram Sabha	: BDO, Bhandra (Lohardaga) vide letter no. 1040, Dated 05.10.2024 informed that Gram Sabha conducted on 01.10.2024.
8	Mine Plan Approval	: Approved by DMO, Lohardaga vide Memo No. 773/M, dated 17.10.2024.
9	Qualified Person	: Shri Tapan Kumar Chakravarty was confirm through email dated

		24.10.2024 that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Manual Mining method	
2	Quarry Area	:	1.01 ha	Life of Mine – 8.17 seasons
3	Waste Generation	:	0.0cu.m	
4	Stripping Ratio	:	0: 0	
5	Working Days	:	150	
6	Benches: size & No	:	--	
7	Elevation of Mine	:	670 AMSL to 670 AMSL	
8	Ground Level Elevation	:	670 AMSL	
9	Ultimate Working Depth	:	668 AMSL(2mbgl)	
10	Water Table	:	657 – 655 AMSL (13-15 mbgl)	
11	Topography of Mine	:	Area represents flat topography	
12	Explosive Requirement	:	--	
13	Diesel/Fuel requirement	:	--	

Production Details

Total excavation of brick earth in cum/season	Number of bricks/season	Total excavation of brick earth
		MT=Cum x 1.3
1500.00	600000	1950.00
1500.00	600000	1950.00
1500.00	600000	1950.00
1500.00	600000	1950.00
1500.00	600000	1950.00

Land Use

Pattern of Utilization	Existing (Ha)	At the end of Plan period (ha.)
Quarrying	Nil	0.37
Storage of casted bricks	Nil	Comes under excavation

Safety Zone	Nil	0.38 (Plantation)
Road	0.01	Comes under excavation
Total used Area	0.01	0.75
Balanced Area	1.00	0.26
Total Applied Area	1.01	1.01

ENVIRONMENT MANAGEMENT

Green Belt Development

S.No.	LOCATION	Area/Length	No of Trees
1	Safety Zone	0.38ha	950
2	Haul /Approach Road	600m	1200
3	No. of Plants distributed in Anganwadi, Panchayat Bhawan or in schools	--	100

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCE, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Plan

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	14,000 8,000 8,000 7,000
3	Plantation	11,25,000	1,00,000
4	Construction and maintenance of haul road	1,50,000	1,50,000
TOTAL		12,75,000	4,87,000

Note: * 2250 plants * 500 Rs (for each plants including hedges) = 11.25 lakhs

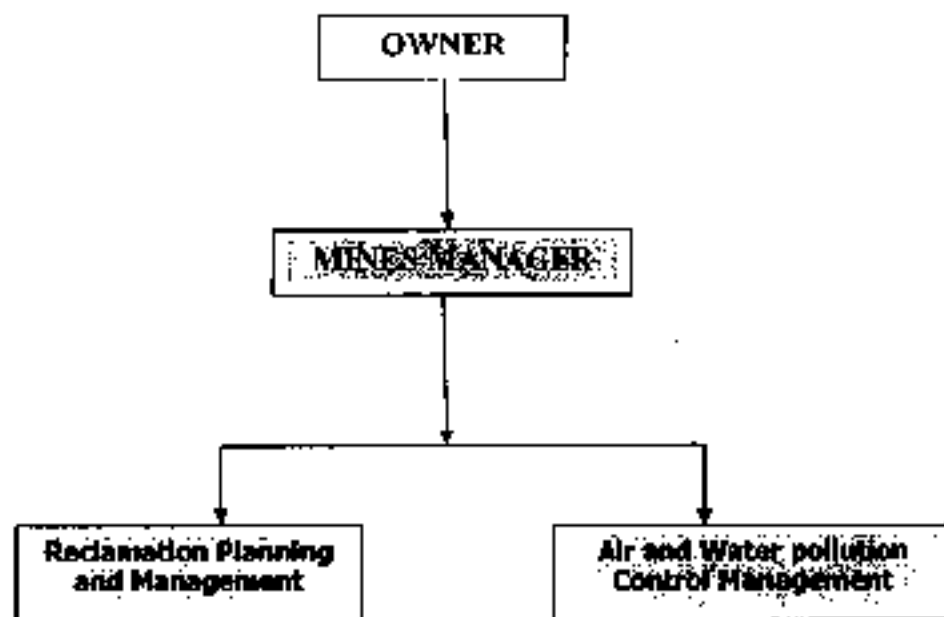
Salary of Labor for haul road maintenance 2 labor*150 =300 per day

300* 300 = 90,000/- or 1,50,000/- (including maintenance)

* 2.5 lakh per kilometer (250000 * 0.60 km haul road = 1,50,000/-)

Environment Monitoring Programme

S. No.	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly



Organization Structure

Solid Waste Management

There is no generation of waste.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- It shall be ensured that quality of drinking water for the worker is hygienic and goodsanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road' shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask etc shall be put in practice.
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSOCIATED WITH PROJECT ACTIVITIES AND THEIR MITIGATION MEASURES ARE DISCUSSED BELOW:

Road accidents

Transportation of sand along the public road may cause accident which may cause injury.

Preventive Measures;

1. Ensure speed limit for the haulage vehicle for 40 KMPH.
2. Regular maintenance of haulage road
3. Appropriate navigational signs informing sensitive area like school and habitation
4. Regular maintenance of the vehicles.

Dust generation

- No drilling involved
- Dust mass would be supplied to workers.
- Regular sprinkling of water on road

Noise Generation

Source of noise pollution in the project would be movement of tippers / tractors transporting sand from mine to stock yard. In general tippers / tractors produce a noise level of 75 - 90 (A) measured at distance of 3m from the source.

Preventive measures

- Transportation activities would be confined during day time only.
- There would be a speed limit of 40 kmph for tippers. Higher is speed higher is noise.
- Regular repair and maintenance of tippers/tractors.
- Plantation on both sides of haulage road.
- Tippers having PUC certified will be allowed to be used for sand transportation.

Health Hazards

During digging and handling of sand i.e. loading, transportation and unloading of sand, workmen would be exposed to inhalation of fine dust particles. This poses a health hazard.

Measures

Following mitigation measures would be taken to minimize this impact on health

- Regular water sprinkling on haulage roads
- Tree plantation on both sides of haulage road

- Tippers / Tractors carrying sand would be covered
- Mask would be provided to workmen employed for digging, loading, transportation and unloading activities

Accident at Site

This is a project with only source of accident at site would be movement of tippers /tractors within mine site for transportation of sand.

Preventive measures

Following mitigation measures would be taken to minimize risk of road accident:

- Separate alignment for movement of loaded vehicles coming out of mine site
- Ensure speed restriction of 10 KMPH within mine site for incoming and outgoing tippers
- Regular maintenance and repair of haulage vehicles employed for sand transportation
- No overtaking of transportation vehicles within mine site
- Proper maintenance of haulage roads

Transportation

The usual method of transporting minerals from the working face is by tractor. Large earth moving equipment's are not used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road/approach road shall be made smooth regularly with a road roller.
- Mine road/approach road will be cleaned daily for smooth transportation.
- Mine road/approach road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

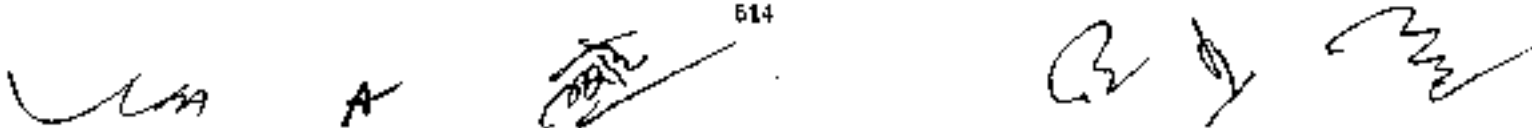
- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.

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- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gablon plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Burka Brick Clay Deposit of M/s Bedal Bricks (Partners : Shri Krishna Prasad & Others), Village : Burka, Thana : Bhandra, Distt. : Lohardaga, Jharkhand (1.01 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLife Portal (<https://merilife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.



15. Stone Mine of M/s Shree Sai Enterprises (Prop. : Shri Mukesh Singh Choudhary), Village : Chandradhipa, Block : Jamtara, Distt. : Jamtara, Jharkhand (2.90 Ha).

(Proposal No : SIA/JH/MIN/ 501824/2024)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 24.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 51319.00 cum/annum or 138561.30 TPA

Project and Location Details:

Sr	Parameter	Details
1	Project Name	: Shree Sai Enterprises
2	Lessee:	: Shree Sai Enterprises Proprietor - Sri Mukesh Singh Choudhary S/o- Sri Subhash Singh Choudhary
3	Lease Address	: Mouza - Chandradhipa, Block - Jamtara, District - Jamtara, State - Jharkhand
4	Lease Area	: 2.90 ha. Acres- 7.19 Acres
5	Type of Land	: Non-Forest (Raiyati Land)
6	Project Cost	: Rs. 80 lakhs
7	EMP Budget	: Capital: Rs 10.755 Lakhs Recurring: 4.87 Lakhs/year
8	New or Expansion	: New
9	Mineable Reserves	: 1307534.40 tons 484272.00 cum
10	Mine Life	: 10 years
11	Man power	: 32
12	Water Requirement	: 7.92 ~ 8.0 KLD (Drinking: 0.32 KLD, Dust Suppression: 3.77 KLD, Plantation: 3.83 KLD)
13	Water Source	: Water will be taken from nearby village
14	DG Set / power	: 500 KVA
15	Crusher	: No Crusher
16	Nearest Water Body	: Maithon Reservoir, Approx. 1.85 km in SSE direction. Ajay River, Approx. 6.20 km in ENE direction.
17	Nearest Habitation	: Chandradhipa, Approx. 0.35 km in South Direction
18	Nearest Railway Station	: Bodma Railway station, approx. 2.12 km in ENE direction.
19	Nearest Air Port	: Deoghar Airport, Approx. 62.23 km towards NNW direction.
20	Nearest Forest	: Protected Forest , Approx. 2.35 km in SW direction of mine site Protected Forest , Approx. 4.80 km in SSE direction of mine site
21	Road & Highways	: NH-419, Approx. 1.72 km in NE direction.

CO-ORDINATES

1	Latitude	:	From 23°53'39.25"N	To 23°53'45.24"N
2	Longitude	:	From 86°49'36.50"E	To 86°49'47.66"E

LAND DETAILS

Khata no.	Plot no.
21	639
22	636, 637, 638, 1147 & 640
23	1152 (P)
54	1154 (P)
69	641, 1148, 1149 & 1151 (P)
93	1153 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LOI) has been issued by District Mining Officer, Jamtara vide letter no. 748/M, dated 11.10.2023.
2	CO	:	The CO, Jamtara vide letter no. 161/Ra, dated 10.02.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatyan & Register II.
3	DMO	:	DMO, Jamtara vide memo no. 779/M, dated 18.10.2023 certified that 01 other mining lease area (2.30 Acre) exists within 500 m radius from proposed project site and total area is 9.49 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 2050, dated 06.09.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Jamtara Forest Division vide letter no. 392, dated 22.03.2023 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved District Survey Report (DSR) of Jamtara District (Sl. no. 09, Page no. 114 B).
7	Gram Sabha	:	BDO, Jamtara vide letter no. 981/Vi., Dated 03.10.2023 informed

		that Gram Sabha conducted on 04.02.2023.
8	Mine Plan Approval	Approved by DMO, Jamtara vide Memo No. 447/M, dated 20.10.2024.
9	Qualified Person	Shri Amarjeet Kumar Singh through e-mail dated 23.10.2024 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast other than fully mechanized (OTFM) mining method	
2	Quarry Area	:	2.90 ha. or 7.19 Acres	Life of Mine – 10 Years
3	Waste Generation	:	Total 12374.50 cum of Waste will be generated during the plan period.	
4	Stripping Ratio	:	1: 0.05	
5	Working Days	:	300	
6	Bench: size & No	:	6m x 6m	
7	Elevation of Mine	:	181 AMSL to 180 AMSL	
8	Ground Level Elevation	:	180 AMSL	
9	Ultimate Working Depth	:	150 AMSL (30 mbgl)	
10	Water Table	:	137-135 AMSL (45-43 mbgl)	
11	Topography of Mine	:	Area represents gently sloping hillock surrounded with peripheral slope all around	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	110 litre/day	

Production Details

Year	Production of Stone		Total Waste (cum)	Bench AMSL
	(in cum)	(in Tones)		
1st	43391.25	117156.38	2900.75	181 – 174
2nd	51319.00	138561.30	3338.00	181 – 174
3rd	38090.25	102843.68	2004.75	174 – 168
4th	39244.50	105960.15	2065.50	174 – 168
5th	41110.30	110997.81	2065.50	168 – 162
Total	213155.30	575519.32	12374.50	

Land Use

Type of land use	Existing (Ha)	At the End of Plan Period (Ha)	During Conceptual Period/ after closure of Mines (Ha)
Existing Quarry	0.16	1.12	2.23 (Entire area will be converted into water)

			reservoir)
Approach roads	0.06	Nil	Nil
Green Belt	Nil	0.67 (Plantation)	0.67 (Plantation)
Area which will remain untouched	2.68	1.11	Nil
Total	2.90	2.90	2.90

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.67 ha	1675
2	Along Approach Road	:	70 m	140
3	No. of plants distributed with consultation local authorities /village Panchayat	:	—	100

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring	--	
	i) Air		14,000
	ii) Water		8,000
	iii) Soil		8,000
	iv) Noise		7,000
3	Plantation	9,75,500	1,00,000
4	Construction and maintenance of haul road	1,00,000	1,50,000
TOTAL		10,75,500	4,87,000

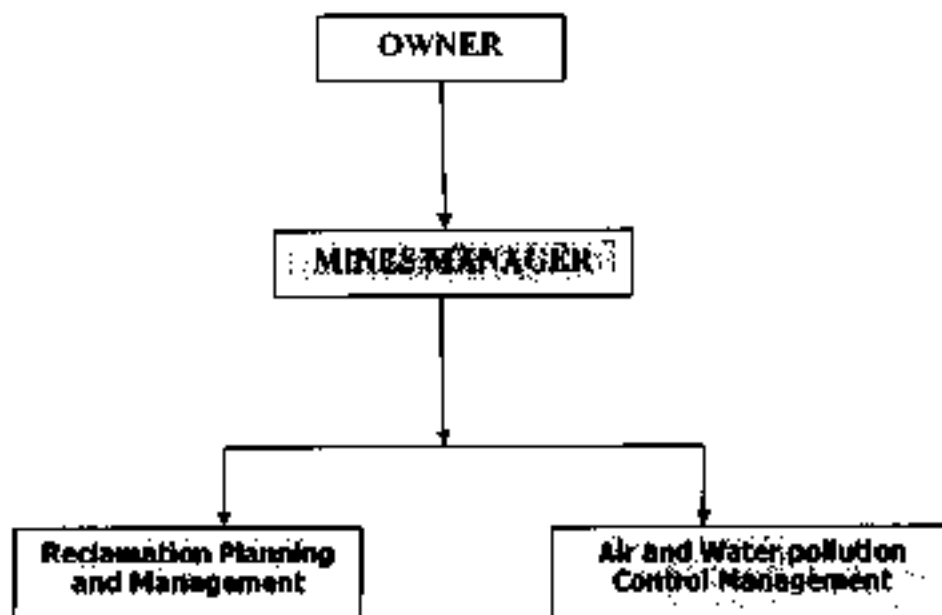
Note: *1915 plants * 500 Rs (for each plants including hedges and fences)= 9.575 lakhs

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

300*300 = 90,000/- or 1,50,000/- (including maintenance)

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly



Organization Structure

Solid Waste Management

Total 12374.50 cum of Waste will be generated during the plan period which shall be used in construction and maintenance of approach road.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside

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- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.

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C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5

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2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling

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- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work

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in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGM5 with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine

- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidl etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.

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- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.

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- I. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Stone Mine of M/s Shree Sai Enterprises (Prop. : Shri Mukesh Singh Choudhary), Village : Chandradhipa, Block : Jamtara, Distt. : Jamtara, Jharkhand (2.90 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Pad Ma Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.



16. Kenduatanr Stone Mine of M/s Rah Agro Technocrats Pvt. Ltd., Village : Kenduatanr, Distt. : Jamtara, Jharkhand (1.736 Ha).

(Proposal No : SIA/JH/MIN/ 501594/2024)

Name of the consultant :P & M Solution, Noida, U.P.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

This is re-appraisal of the EC issued by DEIAA, Jamtara which has been taken up for consideration on 24.10.2024. As per O.M. dated 12.12.2018 issued by MOEF & CC projects fall in category B2.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

The project has been granted EC by DEIAA, Jamtara vide letter no. 08/DEIAA, dated 04.02.2017.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 - 82.0 $\mu\text{g}/\text{m}^3$ PM 2.5-44.0 $\mu\text{g}/\text{m}^3$ SO₂-12.10 NO₂-27.09 $\mu\text{g}/\text{m}^3$ · All the data are within the permissible limit.

Data generated by JSPCB empaneled Laboratory has been also submitted by PP. All the data are within prescribed limit.

Dust suppression is being carried out on regular basis.

As per certified compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per letter no. 706/M, dated 09.10.2024 by DMO,Jamtara is within the permissible limit of EC.

EC Application for: Proposed Capacity- 60217.03 cum/annum or 162586 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Kenduatanr Stone Mine
2	Lessee:	M/s Rah Agro technocrats private Limited (Director - Sri. Harendra kumar Singh)
3	Lease Address	Village - Kenduatanr, P.S.-Narayanpur, District - Jamtara, Jharkhand
4	Lease Area	1.736 ha. Acres- 4.29Acres
5	Type of Land	Non-Forest (Raiyati Land)
6	Project Cost	Rs. 1.30cr.
7	EMP Budget	Capital: Rs. 7.40 Lakhs Recurring: 4.87 Lakhs / year
8	New or Expansion	New

9	Mineable Reserves	:	961232 tons	356011.85 cum
10	Mine Life	:	6 years	
11	Man power	:	36	
12	Water Requirement	:	8.0 KLD (Drinking: 0.36 KLD, Dust Suppression: 5.29 KLD, Plantation: 2.16 KLD)	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	200 KVA	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	Rajoya Nadi, Approx. 1.10 km towards NW direction.	
17	Nearest Habitation	:	Approx. 370 m towards WSW direction	
18	Nearest Railway Station	:	Vidya Sagar Railway station, approx. 7.73 km towards North direction.	
19	Nearest Air Port	:	Deoghar Airport, Deoghar approx. 47.58 km towards North direction.	
20	Nearest Forest	:	Protected Forest, Approx. 4.90 km towards N direction of mine site	
21	Road & Highways	:	Jamtara-Dhanbad Rd, Approx. 0.47 km. in WSW direction. NH-419, approx. 6.52 km in SSW direction.	

CO-ORDINATES

1	Latitude	:	From N 24°00'43.47"	To N 24°00'48.19"
2	Longitude	:	From E 86°41'56.58"	To E 86°42'03.80"

LAND DETAILS

Khata no.	Plot no.
10	123, 124 & 125
11	119, 120, 122 & 126
35	121

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease Deed : 28.11.2018 to 27.11.2028.
2	CO	:	The CO, Narayanpur vide letter no. 553/Ra, dated 11.09.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jharl" in R.S. Khaliyan & Register II.
3	DMO	:	DMO, Jamtara vide memo no. 525/M, dated 22.07.2024 certified that 01 other mining lease area measuring 4.83 (units not specified) exists within 500 m radius from proposed project site.

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		Further DMO, Jamtara vide letter no. 734/M, dated 24.10.2024 clarified that area of the other mine in the cluster is 4.83 acres.
4	DFO Wild Life	DFO, Wildlife Division, Hazaribag vide letter no. 575, dated 23.03.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	Division Forest Officer, Jamtara Forest Division vide letter no. 212, dated 09.02.2024 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	This project is mentioned in approved District Survey Report (DSR) of Jamtara District (Sl no. 05, Page no. 102).
7	Gram Sabha	Gram Sabha conducted on 26.10.2016.
8	Mine Plan Approval	i. Approved by DMO, Jamtara vide Letter No. 745/M, dated 18.12.2021. ii. Approved by DMO, Jamtara vide Letter No. 912/M, dated 21.12.2016.
9	Qualified Person	Shri P.K Sen was present in the meeting and affirmed that the mine plan has been prepared by him.
10	Production Report	Production figure issued by DMO, Jamtara vide letter no. 706/M, dated 09.10.2024.
11	Compliance report of previous EC	Compliance report certified by Regional Office –cum- Laboratory, Dumka vide memo no. 1909, dated 16.10.2024.
12	Previous Environmental Clearance (EC)	Previous EC granted by DEIAA, Jamtara vide letter no. 08/DEIAA, dated 04.02.2017.
13	Consent to Establish (CTE)	CTE Issued by JSPCB vide Ref. no. : JSPCB/HO/RNC/CTE-4441855 /2019/168, dated 06.03.2019.
14	Consent to Operate (CTO)	CTO issued by JSPCB vide Ref. no. : JSPCB/HO/RNC/CTO-18886987 /2024/864, dated 14.05.2024.

Working Details

1	Mining Method	:	Opencast mechanized mining method	
2	Quarry Area	:	1.736 ha or 4.29 Acres	Life of Mine – 6 Year
3	Waste Generation	:	Total 9465 Tonnes Gritty soil to be generated during plan period.	

4	Stripping Ratio	:	1:0.03
5	Working Days	:	300
6	Bench: size & No	:	6m x 6m
7	Elevation of Mine	:	211 AMSL to 213 AMSL
8	Ground Level Elevation	:	211 AMSL
9	Ultimate Working Depth	:	Up to 165 AMSL (46 mbgl)
10	Water Table	:	148-151 AMSL (60-63 mbgl)
11	Topography of Mine	:	Area represents a moderately sloping land with rock mass of Basalt.
12	Explosive Requirement	:	110 kg/day
13	Diesel/Fuel requirement	:	160 litre/day

Production Details

Year	Production of Stone in Tonnes as per EC	Production of Stone in Tonnes	Production of Stone in Cum	Gritty Soil Removal in Tonnes	Bench AMSL
6 th	162467	162465	60172	6045	213-207
7 th	162467	162427	60158	Nil	207-201
8 th	162470	162470	60174	1368	201-195
9 th	162494	162490	60182	Nil	195-189
10 th	162586	162586	60217	2052	195-189
Total	812484	812438	300903	9465	

Land Use

Pattern of Utilization	Present Land Use (in Ha)	At the End of this Plan period (in Ha)	Conceptual Period (in Ha)	
			Water Body	Plantation
Quarry	0.054	1.266 (Including backfilling 0.03 ha)	1.266	--
Safety Barrier	0.470 (Plantation)	0.470 (Plantation)	---	0.470 (Plantation)
Road	0.027	Nil	---	--
Total area in use	0.551	1.736	1.266	0.470
Balanced Area	1.185	Nil	---	---
Total Lease area	1.736	1.736	1.736	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.47 ha	1175 (Already done during previous year of mining)
2	Along Approach Road	:	490 m	980
3	No. of plants distributed with	:	--	2355

	consultation local authorities /village Panchayat		

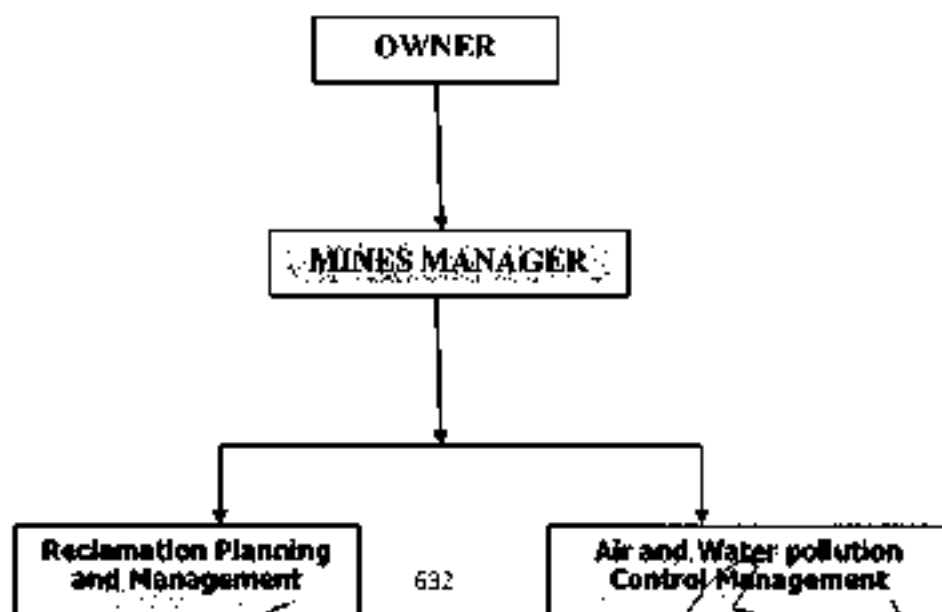
Note: A total of 4510 saplings were proposed to be planted. Out of which 1175 plant in Safety Zone area have been planted during previous year of mining.

(980 plant along approach road & 2355 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 3315 Plants).

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring I) Air ii) Water iii) Soil iv) Noise	--	14,000 8,000 8,000 7,000
3	Plantation	5,40,000	1,00,000
4	Construction and maintenance of haul road	2,00,000	1,50,000
TOTAL		7,40,000	4,87,000



Organization Structure

Solid Waste Management

Total 9465 Tonnes Gritty soil to be generated during plan period. During quarry development in 6th year gritty soil will be removed and this soil will be temporarily dumped at the north-eastern part of the lease area with suitable precautions like parapet wall and garland drain & 8th year little amount of gritty soil will be removed & this soil will be used in road dressing & plantation & 10th year gritty soil will be removed & this soil & existing dumped soil will be backfilled within the exhausted quarry.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

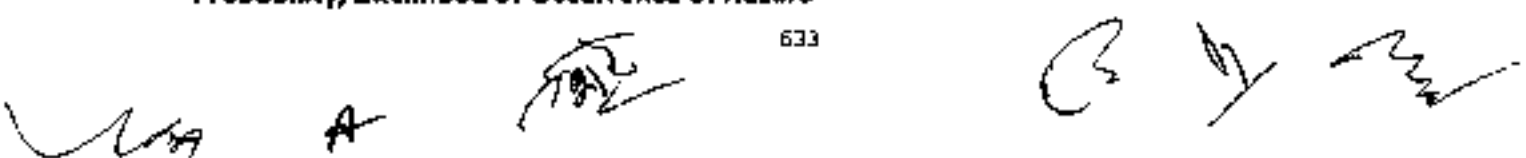
Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

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Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3

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C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone mining operation

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Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

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- Entrapment in by moving part of the drilling equipment

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While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.



Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.

- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the Initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department.

Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)

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- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.

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- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Kenduatnir Stone Mine of M/s Rah Agro Technocrats Pvt. Ltd., Village : Kenduatnir, Distt. : Jamtara, Jharkhand (1.736 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- I. During appraisal of the project it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC.
- II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).
- III. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.

- V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

17. Sawlapur Stone Mine of M/s Max Alert Systems Limited, Village : Sawlapur, Thana : Narayanpur Distt. : Jamtara, Jharkhand (3.43 Ha).

(Proposal No : SIA/JH/MIN/ 501601/2024)

Name of the consultant :P & M Solution, Noida, U.P.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

This is re-appraisal of the EC issued by DEIAA, Jamtara which has been taken up for consideration on 24.10.2024. As per O.M. dated 12.12.2018 issued by MOEF & CC projects fall in category B2.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

The project has been granted EC by DEIAA, Jamtara vide letter no. 35/DEIAA, dated 17.08.2017.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 - 82.0 μ g/m³ PM 2.5-44.0 μ g/m³ SO2-12.10 NO2-27.09 μ g/m³ . All the data are within the permissible limit.

Data generated by JSPCB empaneled Laboratory has been also submitted by PP. All the data are within prescribed limit.

Dust suppression is being carried out on regular basis.

As per certified compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per letter no. 713/M, dated 15.10.2024 by DMO, Jamtara is within the permissible limit of EC.

EC Application for: As per EC letter production: - 56200 cum/annum or 151740 TPA

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Sawlapur Stone Mine
2	Lessee:	: Max Alert Systems Limited Partner - Sri Sajish V Nair
3	Lease Address	: Village - Sawlapur, P.S. - Narayanpur, District - Jamtara, State- Jharkhand
4	Lease Area	: 3.43 ha. Acres- 8.47 Acres
5	Type of Land	: Non-Forest (Raiyati Land)
6	Project Cost	: Rs. 1.40 cr.
7	EMP Budget	: Capital: Rs. 5.90 Lakhs Recurring: 4.87 Lakhs / year
8	New or Expansion	: New
9	Mineable Reserves	: Proved : 1495530 tons Probable : 15120 tons
10	Mine Life	: 9 years 6 months
11	Man power	: 30
12	Water Requirement	: 9.0 KLD (Drinking: 0.30 KLD, Dust Suppression: 6.48 KLD, Plantation: 1.92 KLD)
13	Water Source	: Water will be taken from nearby village
14	DG Set / power	: 500 KVA
15	Crusher	: No Crusher
16	Nearest Water Body	: Bansjuria Nadi, Approx. 1.75 km towards West direction of mine site.
17	Nearest Habitation	: Approx. 210 m in WSW direction
18	Nearest Railway Station	: Vidyasagar Railway station, approx. 7.18 km towards North direction
19	Nearest Air Port	: Deoghar Airport, Deoghar approx. 47.37 km towards North direction.
20	Nearest Forest	: Protected Forest, Approx. 4.90 km towards NNW direction of mine site.
21	Road & Highways	: NH-419, Approx. 7.10 km. In SSW direction.

CO-ORDINATES

1	Latitude	: From 24°0'56.03" N To 24°1'6.30" N
2	Longitude	: From 86°42'22.17" E To 86°42'28.06" E

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LAND DETAILS

Jamabadi No.	Plot No.
12	429
13	430
25	431
07	432
03	433 & 434
08	435

STATUTORY CLEARANCES

1	LOI / Lease docs	: Lease Deed : 25.10.2017 to 24.10.2027.
2	CO	: The CO, Narayanpur vide letter no. 475/Ra, dated 16.08.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatliyan & Register II.
3	DMO	: DMO, Jamtara vide memo no. 726/M, dated 19.10.2024 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	: DFO, Wildlife Division, Hazaribag vide letter no. 2046, dated 06.09.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	: Division Forest Officer, Jamtara Forest Division vide letter no. 57, dated 11.01.2017 certified that the distance of notified forest is more than 250 meter from proposed project site.
6	DSR	: This project is mentioned in approved District Survey Report (DSR) of Jamtara District (Sl. no. 04, Page no 102).
7	Gram Sabha	: Gram Sabha conducted on 17.01.2017.
8	Mine Plan Approval	: Approved by DMO, Jamtara vide Letter No. 286/M, dated 18.04.2017.
9	Qualified Person	: Shri P.K. Sen was present in the meeting and affirmed that the mine plan has been prepared by him.
10	Production Report	: Production figure issued by DMO, Jamtara vide letter no. 713/M, dated 15.10.2024.
11	Compliance report of	: Compliance report certified by Regional Office -cum- Laboratory, Dumka vide memo no. 1910, dated 16.10.2024.

	previous EC		
12	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Jamtara vide letter no. 35/DEIAA, dated 17.08.2017.
13	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. : JSPCB/HO/RMC/CTE-1977439/2018/78, dated 20.01.2018
14	Consent to Operate (CTO)	:	CTO issued by JSPCB vide Ref. no. : JSPCB/HO/DMK/CTO-11368775/2021/217, dated 20.12.2021.

Working Details

1	Mining Method	:	Opencast mechanized mining method
2	Quarry Area	:	3.43 ha. or 8.47 Acres Life of Mine – 9 Years 6 Months
3	Waste Generation	:	Nil
4	Stripping Ratio	:	1:00
5	Working Days	:	300
6	Bench: size & No	:	3m x 3m
7	Elevation of Mine	:	257 AMSL to 259 AMSL
8	Ground Level Elevation	:	257 AMSL
9	Ultimate Working Depth	:	220 AMSL (37 mbgl)
10	Water Table	:	192-190 AMSL (65-67 mbgl)
11	Topography of Mine	:	Area represents an almost flat land with two hillocks.
12	Explosive Requirement	:	110 kg/day
13	Diesel/Fuel requirement	:	140 litre/day

Production Details (As per DEIAA EC)

Year	Production in EC (tons)	Production of Stone in Cum
1 st	151740	56200
2 nd	151049	55944
3 rd	150973	55916
4 th	151160	55985
5 th	151322	56045
Total	756244	280090

As per EC letter production: - 56200 cum/annum or 151740 TPA

Land Use

Category	Present Land Use (in Ha)	During Plan period (in Ha)	After Life of Mine (in Ha)
Quarry	1.80	2.65	2.65 ha will be left as water reservoir
Haul Road	0.01	0.03 (comes under quarry)	-
Safety Barrier	0.78 (Plantation)	0.78 (Plantation)	0.78 (Plantation)
Total area in use	2.59	3.43	3.43
Balanced unused Area	0.84	-	-
Total Lease area	3.43	3.43	3.43

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Safety Zone	0.78 ha	1950 (Already done during previous year of mining)
2	Along Approach Road	430 m	860
3	No. of plants distributed with consultation local authorities /village Panchayat	--	3010

Note: A total of 5820 saplings were proposed to be planted. Out of which 1950 plant in Safety Zone area have been planted during previous year of mining.

(860 plant along approach road & 3010 plants with consultation from local authorities/village Panchayat) will be done in the first year of operation. (Total 3870 Plants)

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

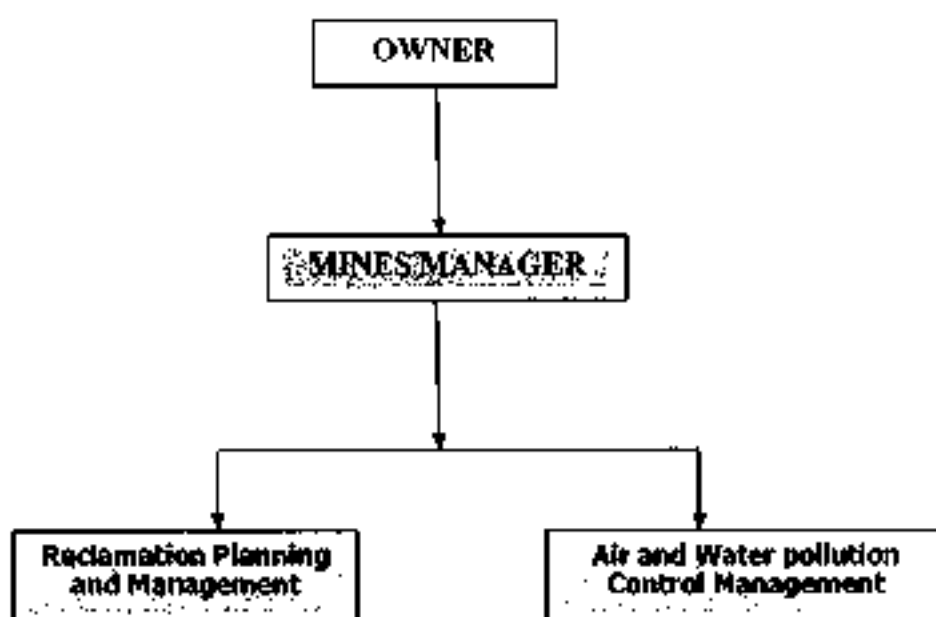
COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000

2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	14,000 8,000 8,000 7,000
3	Plantation	4,80,000	1,00,000
4	Construction and maintenance of haul road	1,10,000	1,50,000
TOTAL		5,90,000	4,87,000

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly



Organization Structure

Solid Waste Management

During Plan period gritty soil removed will be dumped at western side with suitable precaution. Some quantity of the removed gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible.

Water Quality Management

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- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 5 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.

L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4

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2	Medium Risk	5-12
3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose slides are properly dressed

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- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
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- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the

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drill hole continuously and discharges the same in a dust collector specially provided for the purpose.

- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

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Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

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- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted

by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

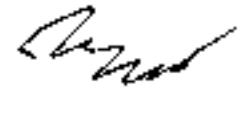
Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.

- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Sawlapur Stone Mine of M/s Max Alert Systems Limited, Village : Sawlapur, Thana : Narayanpur Distt. : Jamtara, Jharkhand (3.43 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - II along with following specific conditions :

- I. During appraisal of the project it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC.
- II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).
- III. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

- VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLEET, Audiometry and other required tests . Summary findings of same to be submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

18. Dundu Stone Deposit of Md. Mustafa, Village : Dundu, Thana : Manika Distt. : Latehar, Jharkhand (2.72 Ha).

(Proposal No : SIA/JH/MIN/ 501435/2024)

Name of the consultant :P & M Solution, Noida, U.P.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

This is re-appraisal of the EC issued by DEIAA, Latehar which has been taken up for consideration on 24.10.2024. As per O.M. dated 12.12.2018 issued by MOEF & CC projects fall in category B2.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

The project has been granted EC by DEIAA, Latehar vide letter no. 32 EC/DEIAA/2017, dated 22.04.2017.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 - 82.0 μ g/m³ PM 2.5-44.0 μ g/m³ SO2-12.10 NO2-27.09 μ g/m³ . All the data are within the permissible limit.

Data generated by JSPCB empaneled Laboratory has been also submitted by PP. All the data are within prescribed limit.

Dust suppression is being carried out on regular basis.

As per certified compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.



Production detail as per memo no. 968/M, dated 23.10.2024 by D.M.O, Latehar is within the permissible limit of EC.

The compliance report of previous EC has been certified by RO, JSPCB, Ranchi vide letter no. 1247, dated 25.10.2024.

EC Application for: Proposed Capacity- 21262.9 cum/annum or 57409.83 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Dundu Stone Deposit
2	Lessee:	Md. Mustafa R/O- Village- Tarwadih, P.O. –Nawagarh, P.S. - Latehar , District - Latehar, State - Jharkhand
3	Lease Address	Mouza - Dundu, Thana - Manika, Thana No.-164, District - Latehar, State- Jharkhand
4	Lease Area	2.72 ha Acres- 6.72 Acres
5	Type of Land	Non-Forest (Raiyat Land)
6	Project Cost	Rs. 1.3cr.
7	EMP Budget	Capital: Rs. 8.80 Lakhs Recurring: 4.87 Lakhs / year
8	New or Expansion	New
9	Mineable Reserves	Proved : 375833.16 tons Probable : 195804.15 tons
10	Mine Life	10 years
11	Man power	35
12	Water Requirement	9.75 ~ 10.0 KLD (Drinking: 0.35 KLD, Dust Suppression: 6.68 KLD, Plantation: 2.72 KLD)
13	Water Source	Water will be taken from nearby village
14	DG Set / power	500 KVA
15	Crusher	Yes
16	Nearest Water Body	Sukri River, Approx. 0.11 km towards South direction.
17	Nearest Habitation	Dundu, Approx. 0.11 km towards NW direction.
18	Nearest Railway Station	Kumandih Railway station, approx. 7.39 km towards SW direction.
19	Nearest Air Port	Birsa Munda Airport, Ranchi approx. 107.26 km towards ESE direction.
20	Nearest Forest	Dense Mixed jungle, Approx. 0.30 km towards ENE direction of mine site. Reserved Forest, Approx. 1.25 km towards SW direction of mine site.
21	Road & Highways	NH-39, Approx.1.27 km in WSW direction.

CO-ORDINATES

1	Latitude	From 23°48'38.89588" N To 23°48'45.67086" N

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2	Longitude	:	From 84°24'56.32722" E	To 84°25'04.03849" E

LAND DETAILS

Khata no.	Plot no.
322	1054

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease Deed :17.10.2017 to 16.10.2027.
2	CO	:	The CO, Manika vide letter no. 393, dated 13.09.2024 has mentioned the plot no. of the project is not recorded as "Junglo-Jhar" in R.S. Khatlyan & Register II.
3	DMO	:	DMO, Latehar vide memo no. 766/M, dated 28.08.2024 certified that 01 other mining lease area (5.18 Acre) exists within 500 m radius from proposed project site and total area is 11.90 Acre.
4	DFO Wild Life	:	Deputy Director, Palamau Tiger Project, South Division, Medininagar vide letter no. 782, dated 02.09.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve.
5	DFO Territorial	:	Division Forest Officer, Latehar Forest Division vide letter no. 1916, dated 06.09.2016 certified that the distance of notified forest is 300 meter from proposed project site.
6	DSR	:	This project is mentioned in approved District Survey Report (DSR) of Latehar District (Sl. no. 09, Page no. 17).
7	Gram Sabha	:	Gram Sabha conducted on 08.08.2016.
8	Mine Plan Approval	:	Approved by DMO, Latehar vide Letter No. 13/M, dated 02.01.2024.
9	Qualified Person	:	Md. Tauseef Warsi was confirm through email dated 25.10.2024 That the mine plan has been prepared by him.
	Production Report	:	Production figure issued by DMO, Latehar vide memo no. 968/M, dated 23.10.2024.
	Compliance report of previous EC	:	Compliance report of previous EC certified by RO, JSPCB, Ranchi vide letter no. 1247, dated 25.10.2024

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Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Latehar vide letter no. 32 EC/DEIAA/2017, dated 22.04.2017.
Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. : JSPCB/HO/RNC/CTE-3950441/2018/1265, dated 18.12.2018.
Consent to Operate (CTO)	:	CTO issued by JSPCB vide Ref. no. : JSPCB/HO/RNC/CTO-19228397/2024/97, dated 13.06.2024.

Working Details

1	Mining Method	:	Opencast mechanized mining method	
2	Quarry Area	:	2.72 hectare or 6.72 Acres	Life of Mine – 10 Years
3	Waste Generation.	:	Total 8227 Cum waste to be generated during plan period.	
4	Stripping Ratio	:	1: 0.09	
5	Working Days	:	300	
6	Bench: size & No	:	6m x 5m	
7	Elevation of Mine	:	358 AMSL to 365 AMSL	
8	Ground Level Elevation	:	358 AMSL	
9	Ultimate Working Depth	:	348 AMSL (10 mbgl)	
10	Water Table	:	340 - 337 AMSL (18-21 mbgl)	
11	Topography of Mine	:	Area an almost flat land with two hillocks	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	110 litre/day	

Production Details (As per DEIAA EC)

Year	Production of Stone in Tonnes As per EC
1 st	57171.29
2 nd	57091.77
3 rd	57409.83
4 th	57043.04
5 th	57192.83
Total	285908.75

As per EC letter production: - 21262.9 cum/annum or 57409.83 TPA

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Land Use

Land Use Pattern			
	Existing	First to Fourth year	After Life Of Mine
Category	Area in Hectares	Area in Hectares	Area in Hectares
Quarry	0.32	1.73	2.12 ha (Entire area will be converted into Water Reservoir)
Haul Road	0.01	0.02	0.02
Crusher	—	0.03	Removed crusher
Safety Barrier	0.58 (Plantation)	0.58 (Plantation)	0.58 (Plantation)
Dump with Parapet wall & Garland drain	0.00	0.03	(Waste dump to be removed and backfilled)
Total area in use	0.91	2.39	2.72
Balanced unused Area	1.81	0.33	0.00
Balanced used Area	0.00	0.00	0.00
Total Lease area	2.72	2.72	2.72

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.58 ha	1450 (Already done during previous year of mining)
2	Along Approach Road	:	630 m	1260
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	2910

Note: A total of 5620 saplings were proposed to be planted. Out of which 1450 plant in Safety Zone area have been planted during previous year of mining.

(1260 plant along approach road & 2910 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 4170 Plants).

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be

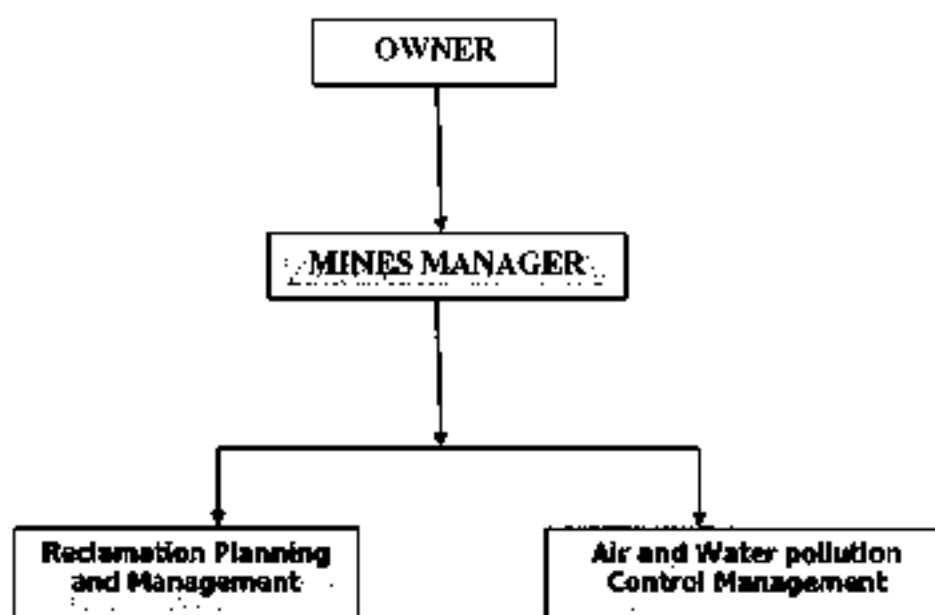
undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	—	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	14,000 8,000 8,000 7,000
3	Plantation	6,80,000	1,00,000
4	Construction and maintenance of haul road	2,00,000	1,50,000
TOTAL		8,80,000	4,87,000

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly



Organization Structure

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Solid Waste Management

Total 8227 Cum waste to be generated during plan period. The area is covered with a layer of gritty soil. During quarry development in 1st year gritty soil and intercalated waste will be removed and this material will be temporarily dumped at the west part of the applied area with suitable precautions like constructing parapet wall, garland drain & In 2nd year during quarry advancement intercalated waste will be removed and this intercalated waste will be temporarily dumped at slop dumping within the 1st years dump site, in 3rd & 4th year removed materials will be backfill within the exhausted quarry in south east direction, in 5th year intercalated waste will be removed. This removal material and previous temporarily dumped material (1st and 2nd years) backfilled within the exhausted quarry of the applied area. In conceptual period removal intercalated waste will be backfill in lower bench of the exhausted quarry.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1

C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in

loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

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- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)

- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.

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- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Dundu Stone Deposit of Md. Mustafa, Village : Dundu, Thana : Manika Distt. : Latehar, Jharkhand (2.72 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- I. During appraisal of the project it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC.
- II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).
- III. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be

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done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

- VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

19. Lowadih Stone Mine of M/s Devanti Projects Pvt. Ltd., Village : Lowadih, Thana : Patratu, Distt. : Ramgarh, Jharkhand (2.14 Ha).

(Proposal No : SIA/JH/MIN/ 501994/2024)

Name of the consultant :P & M Solution, Noida, U.P.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

This is re-appraisal of the EC issued by DEIAA, Ramgarh which has been taken up for consideration on 24.10.2024. As per O.M. dated 12.12.2018 issued by MOEF & CC projects fall in category B2.

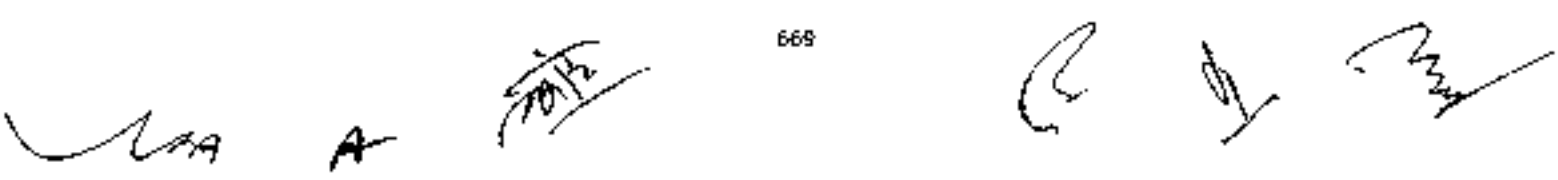
As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

The project has been granted EC by DEIAA, Ramgarh vide letter no. EC/DEIAA/2016-17-07, dated 12.08.2017.

Existing baseline condition as per monitoring report submitted by PP is as follows PM10 - 82.0 μ g/m³PM 2.5-44.0 μ g/m³ SO₂-12.10 NO₂-27.09 μ g/m³. All the data are within the permissible limit.

Data generated by JSPCB empaneled Laboratory has been also submitted by PP. All the data are within prescribed limit.

Dust suppression is being carried out on regular basis.



As per certified compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per memo no. 1027/M, dated 09.09.2024 by D.M.O, Ramgarh is within the permissible limit of EC.

The compliance report of previous EC has been certified by RO, JSPCB, Hazaribag vide letter no. 1892, dated 23.10.2024.

EC Application for: Proposed Capacity- 27200 cum/annum or 76160 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Lowadih Stone Mine
2	Lessee:	: M/s Devanti Projects Pvt. Ltd., Director - Sri Lilambar Baraik
3	Lease Address	: Mouza - Lowadih, Thana - Patratu, District - Ramgarh, State- Jharkhand
4	Lease Area	: 2.14 ha. Acres- 5.30 Acres
5	Type of Land	: Non-Forest (Rajiyati Land)
6	Project Cost	: Rs. 1.10cr.
7	EMP Budget	: Capital: Rs. 9.25 Lakhs Recurring: 4.87 Lakhs / year
8	New or Expansion	: New
9	Mineable Reserves	: 603333 tons 215476 cum
10	Mine Life	: 7.92 or 8 years
11	Man power	: 35
12	Water Requirement	: 11 KLD (Drinking: 0.35 KLD, Dust Suppression: 6.95 KLD, Plantation: 3.0 KLD)
13	Water Source	: Water will be taken from nearby village
14	DG Set / power	: 500 KVA
15	Crusher	: No Crusher
16	Nearest Water Body	: Damodar River, Approx. 9.90 km towards West direction of mine site.
17	Nearest Habitation	: Approx. 340 m towards ESE direction.
18	Nearest Railway Station	: Barkakana Junction Railway station, approx. 9.30 km towards NE direction.
19	Nearest Air Port	: Birsa Munda Airport, Ranchi approx. 28.40 km towards SSW direction.
20	Nearest Forest	: Protected Forest , Approx. 1.50 km towards South direction of mine site. Protected Forest , Approx. 2.0 km towards West direction of mine site.
21	Road & Highways	: SH-2, Approx.8.00 km. in North direction.

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CO-ORDINATES

1	Latitude	:	From 23°33'43.60" N to	To 23°33'53.19" N
2	Longitude	:	From 85°24'09.62"E to	To 85°24'16.38" E

LAND DETAILS

Khata no.	Plot no.
20	282 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease Deed :20.10.2017 to 19.10.2027.
2	CO	:	The CO. Patratu vide letter no. 1453, dated 28.07.2015 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyar & Register II.
3	DMO	:	DMO, Ramgarh vide memo no. 1100/M, dated 04.10.2024 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Divison, Hazaribag vide letter no. 2164, dated 09.10.2024 certified that the proposed project site is outside Eco Sensitive Zone of Hazaribag Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Ramgarh Forest Division vide letter no. 1662, dated 20.08.2015 certified that the distance of notified forest is 300 meter from proposed project site.
6	DSR	:	This project is mentioned in approved District Survey Report (DSR) of Ramgarh District (Sl. no. 02, Page no. 28).
7	Gram Sabha	:	Gram Sabha conducted on 20.05.2015.
8	Mine Plan Approval	:	i. Approved by DMO, Ramgarh vide Letter No. 848/Mining, dated 19.07.2024. ii. Approved by Deputy Director Mines, N.C. Circle, Hazaribag vide Letter No. 477/M, dated 28.11.2015.
9	Qualified Person	:	Shri P.K. Sen was present in the meeting and affirmed that the mine plan has been prepared by him.
	Production Report	:	Production figure issued by DMO, Ramgarh vide memo no. 1027/M, dated 09.09.2024.








Compliance report of previous EC	:	Compliance report of previous EC certified by RO, JSPCB, Hazaribag vide letter no. 1892, dated 23.10.2024.
Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Ramgarh vide letter no. EC/DEIAA/2016-17-07, dated 12.08.2017.
Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. : JSPCB/HO/RNC/CTE-1928745 /2017/768, dated 13.12.2017.
Consent to Operate (CTO)	:	CTO issued by JSPCB vide Ref. no. : JSPCB/HO/HZB/CTO-4326865 /2019/4, dated 09.01.2019.

Working Details

1	Mining Method	:	Opencast Semi - Mechanized Mining Method
2	Quarry Area	:	2.14 ha or 5.30 Acres Life of Mine – 7.92 or 8 years
3	Waste Generation	:	3408 cum or 5112 tonnes
4	Stripping Ratio	:	1:0.01
5	Working Days	:	300
6	Bench: size & No	:	6m x 6m
7	Elevation of Mine	:	649 AMSL to 652 AMSL
8	Ground Level Elevation	:	649 AMSL
9	Ultimate Working Depth	:	623 AMSL (26 mbgl)
10	Water Table	:	604-608 AMSL (41-45 mbgl)
11	Topography of Mine	:	Area represents hilly area with rock mass of Granite-gneiss
12	Explosive Requirement	:	110 kg/day
13	Diesel/Fuel requirement	:	160 litre/day

Production Details

Year	Production of Stone in tons as per EC	Production of Stone in Cum	Production of Stone in Tonnes	Generation of Gritty Soil in Tonnes	Bench AMSL
1 st	76017	27149	76016	5112	659-647
2 nd	76126	27188	76126	.	647-641
3 rd	76056	27162	76055	.	647-641
4 th	76140	27193	76140	.	641-634
5 th	76160	27200	76160	.	635-629
Total	380499	135892	380497	5112	

As per approved mine plan production: - 27200 cum/annum or 76160 TPA.

As per EC letter production: - 27200 cum/annum or 76160 TPA .

Land Use

Pattern of Utilization	Present Land Use (in Ha)	At the End of this Plan period (in Ha)	At the End of Mine (in Ha)	Conceptual Period (in Ha)	
				Water Body	Plantation
Quarry	0.900	1.240	1.59 (Including backfill 0.11 Ha.)	1.59	--
Safety Zone	0.550 (Plantation)	0.550 (Plantation)	0.550 (Plantation)	---	0.550
Road	0.006	0.005	---	---	--
Dump		0.068	---	---	---
Garland Drain	---	0.005	---	---	---
Parapet Wall	---	0.004	---	---	---
Total area in use	1.456	1.872	2.14	1.59	0.550
Balanced Area	0.684	0.268	---	---	---
Total Lease area	2.14	2.14	2.14	2.14	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Safety Zone	: 0.550 ha	1375 (Already done during previous year of mining)
2	Along Approach Road	: 700m	1400
3	No. of plants distributed with consultation local authorities /village Panchayat	: --	2975

Note: A total of 5750 saplings were proposed to be planted. Out of which 1375 plant in Safety Zone area have been planted during previous year of mining.

(1400 plant along approach road & 2975 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 4375 Plants).

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

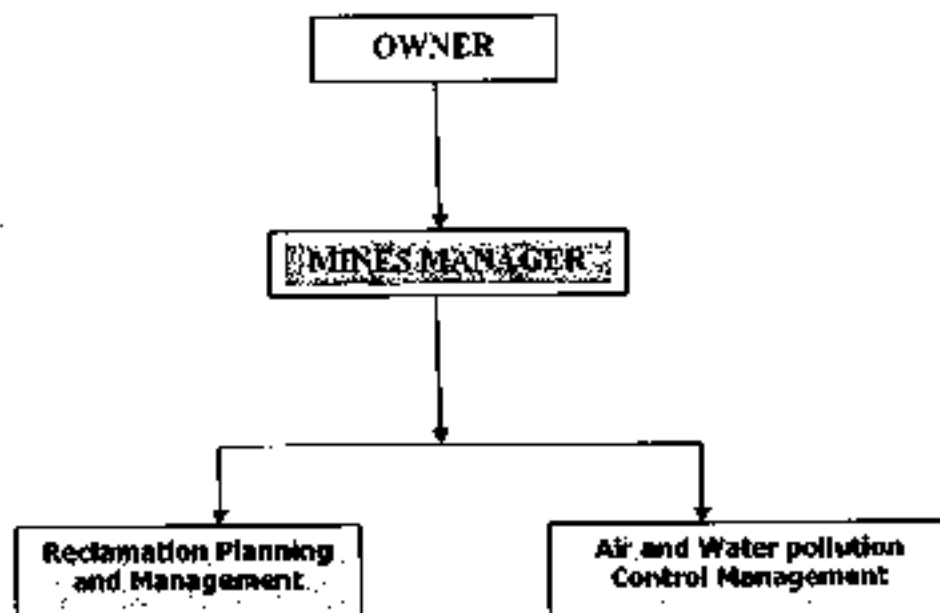
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COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	14,000 8,000 8,000 7,000
3	Plantation	7,50,000	1,00,000
4	Construction and maintenance of haul road	1,75,000	1,50,000
TOTAL		9,25,000	4,87,000

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

**Organization Structure****Solid Waste Management**

Total 3408 cum or 5112 tons waste to be generated during plan period. The area is covered with a layer of gritty soil. During quarry development in 1st year gritty soil will be removed and this soil will be temporarily dumped at the north-east part of the area with suitable precautions like parapet wall, garland drain. In conceptual period total removal soil & existing

dumped soil will be backfill within the exhausted quarry.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard Identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.

L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale








S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard Identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily Injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken.

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- ◆ Blast hole geometry shall be properly designed.
- ◆ Blast site shall be wetted before and after blasting operations are completed.
- ◆ Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- ◆ Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- ◆ While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- ◆ The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- ◆ Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- ◆ Poorly designed shots can result in misfires, early ignition and flying rock.

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The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones; cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge

of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
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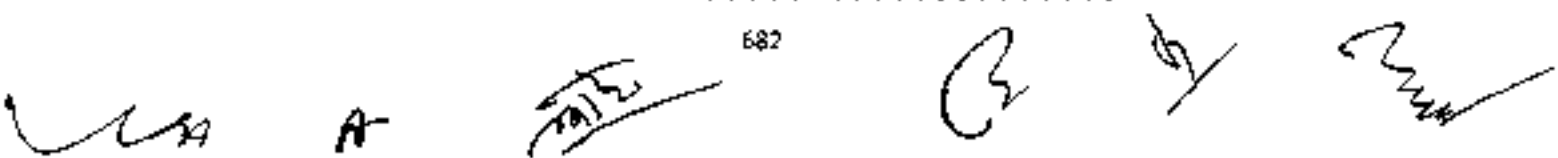
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- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.

- I. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Lowadih Stone Mine of M/s Devanti Projects Pvt. Ltd., Village : Lowadih, Thana : Patratu, Distt. : Ramgarh, Jharkhand (2.14 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - II along with following specific conditions.:

- I. During appraisal of the project it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC.
- II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLife Portal (<https://merilife.nic.in>).
- III. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.



20. Pratappur Stone Deposit of M/s B.M. Stone Works (Partners : Morful Haque & Belal Sheikh), Village : Pratappur, P.S. : Hiranpur, Distt. : Pakur, Jharkhand (2.44 Ha).

(Proposal No : SIA/JH/MIN/ 500992/2024)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 24.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Environmental Clearance (EC) after ToR.

The State Expert Appraisal Committee, Jharkhand deliberated the project during its 114th meeting held on 25-29.06.2024 and SEIAA, Jharkhand has approved the ToRs in 114th meeting held on 09th & 10th July, 2024. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2024-25/3150/2024/165, dated 16.07.2024. The final EIA / EMP submitted by PP to SEAC on 18.10.2024.

EC Application for: 61936.00 cum/annum or 179614.40 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Pratappur Stone Deposit (Area- 2.44 Ha or 6.03 Acres)
2	Lessee:	M/s B.M. Stone Works Partners- Morful Haque & Belal Sheikh
3	Lease Address	Near Village – Pratappur, P.S - Hiranpur, District – Pakur, Jharkhand
4	Lease Area	2.44 Ha Acres- 6.03 Acres
5	Type of Land	Non Forest – Raiyati Land
6	Project Cost	Rs. 120 Lakhs
7	EMP Budget	Capital: 20.35 Lakhs Recurring: 14.50 Lakh / year
8	New or Expansion	New
9	Mineable Reserves	cum.: 618970 cum Tonnes: 1795013 tones
10	Mine Life	10 years
11	Man power	27
12	Water Requirement	9.57 ~ 10.0 KLD (Drinking: 0.27 KLD, Dust Suppression: 4.28 KLD, Plantation: 5.02 KLD)
13	Water Source	From Nearby villages by tankers
14	DG Set / power	500 k VA
15	Crusher	No crusher
16	Nearest Water Body	Torai Nadi, Approx. 3.74 km towards SSE direction of mine site.
17	Nearest Habitation	Pratappur, Approx. 300 meters towards North direction.

18	Nearest Rail Station	:	Kotalpukur Railway station, approx. 7.21 km towards NE direction
19	Nearest Air Port	:	Deoghar Airport approx. 112 km towards WSW direction.
20	Nearest Forest	:	Protected Forest approx. 1.78 Km in WNW direction of mine site. Protected Forest approx. 8.48 Km in NW direction of mine site. Protected Forest approx. 4.50 Km in NW direction of mine site. Protected Forest approx. 9.0 Km in NE direction of mine site. Protected Forest approx. 8.0 Km in South direction of mine site.
21	Road & Highways	:	NH-133A, Approx. 3.40 km in WSW direction.

CO-ORDINATES

1	Latitude	From 24°41'47.51" N	To 24°41'54.42" N
2	Longitude	From 87°46'06.93" E	To 87°46'15.08" E

LAND DETAILS

Khata no.	Plot no.
06	567 (P), 569 (P), 570, 571, 572 & 573
08	580, 588, 589 (P), 590 & 591
10	566 (P), 568 (P), 598 & 599

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LOI) has been issued by District Mining Officer, Pakur vide memo no. 2687/M, dated 20.12.2023.
2	CO	:	The CO, Hiranpur vide letter no. 446/Ra., dated 25.08.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II and also mentioned that the habitation of 28 houses within 500 meters of proposed project site.
3	DMO	:	DMO, Pakur vide memo no. 121/M, dated 19.01.2024 certified that 04 other mining lease area (6.55 Acre, 2.60 Acre, 6.98 Acre & 5.81 Acre) exists within 500 m radius from proposed project site and total area is 27.97 Acre (11.32 Ha).
4	DFO Wild Life	:	DFO -cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 3070, dated 22.12.2022 certified that the proposed

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		project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Forest Distance	Division Forest Officer, Pakur Forest Division vide letter no. 1504, dated 30.09.2021 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	The DMO, Pakur has been certified vide memo no. 258/M, dated 16.02.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 40, Page no. 119).
7	Gram Sabha	BDO, Hiranpur vide letter no. 139/Vi., dated 18.02.2022 informed that Gram Sabha conducted on 15.02.2022.
8	Mine Plan Approval	Approved by Deputy Director Mines, Santhal Pargana Circle, Dumka vide Memo No. 46/DDM, dated 24.04.2024.
9	Qualified Person	Shri Tapan Kumar Chakravarty through e-mail dated 24.10.2024 affirmed that the mine plan has been prepared by him.
10	Public Hearing	Public Hearing conducted on 30.09.2024.
11	Baseline study	1 st March, 2024 to 31 st May, 2024.

Working Details

1	Mining Method	:	Opencast Mechanized Method	
2	Quarry Area	:	2.44 Ha / 6.03 Acres	Life of Mine – 10 Years
3	Waste Generation	:	5051.00 cum waste generated during the plan period.	
4	Stripping Ratio	:	1:0.01	
5	Working Days	:	300	
6	Bench: size & No	:	6m x 6m	
7	Elevation of Mine	:	53 AMSL to 52 AMSL	
8	Ground Level Elevation	:	52 AMSL	
9	Ultimate Working Depth	:	22 AMSL (30 mbgl)	
10	Water Table	:	10-12 AMSL (42-40 mbgl)	
11	Topography of Mine	:	Area represents a flat topography.	
12	Explosive Requirement	:	110kg/day	
13	Diesel/Fuel requirement	:	150 litre/day	

Production Details

Year	Production of Stone in cum	Production of Stone in tones	Waste (cum) in plan period	Bench (AMSL)

1st	53550.00	155295.00	1631.00	53 - 46
2nd	54230.00	157267.00	1695.00	53 - 46
3rd	56950.00	165155.00	1705.00	52 - 46
4th	61620.00	178698.00	-	46 - 40
5th	61936.00	179614.40	-	46 - 40
Total	288286.00	836029.40	5051.00	

Land Use

Pattern of Utilization	Existing (Ha)	After five years Plan period (Ha)	After life of mine (Ha)
Quarry	-	1.86	1.86 (Entire area will be converted into Rain water harvesting)
Mine Road	0.006	Comes under qry	Comes under qry
Safety Zone	-	0.58 (Plantation)	0.58 (Plantation)
Total	0.006	2.44	2.44
Balance	2.434	-	-
Lease hold area	2.44 Ha		

Public Hearing (Action Plan):

S. No.	Issues raised	Action Plan with Budgetary Allocation	Action Plan with Time Bound
1	Employment issues	Employment will be given as per the merit.	Employment will be given to local people as per their eligibility.
2	Fencing should be done around the mine site	Budget for fencing around the mine site Rs 3.0 lakh Capital Cost and every year Rs. 1.0 lakhs will be spent as the recurring cost.	It will be done within in the first year after getting Environmental Clearance.
3	Prevent air pollution and Regular water sprinkling	Total Rs. 4,00,000/- will be spent as recurring cost for Pollution Control & Dust Suppression which has also been included in EMP Cost.	Water Sprinkling will be carried out on regular basis from the first year of mining.
4	Road Maintenance	Total Rs. 2,00,000/- will be spent as capital cost and Rs. 1,50,000/- will be spent as recurring cost for construction and maintenance of haul road which has also been included in EMP	This will be done within 1 Year after getting Environmental Clearance.

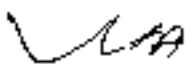
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		cost.	
5	Medical facilities Arrangement	Total Rs. 1,50,000/- will be spent as recurring cost for medical camp (once in every month) which has also been included in EMP cost.	This will be done within 1 Year after getting Environmental Clearance.
6	Arrangement of vehicles to take patients to hospital	Budget for ambulance facilities Rs 2.0 lakh will be spent as recurring cost.	This will be done within 1 Year after getting Environmental Clearance.
7	Issues raised for drinking water should be provided to the villagers	Hand-pumps with deep boring will be installed for clean drinking water in village for which Total Rs. 1,00,000/- will be spent as capital cost and Rs. 30,000/- will be spent as recurring cost which has also been included in EMP cost.	It will be done within 1 Year after getting Environmental Clearance.
8	Construction of drain for hand pump water drainage	Budget for drain construction is Rs 0.50 lakh capital cost and Rs 0.20 lakh recurring cost.	It will be done within 1 Year after getting Environmental Clearance.
9	Two children of the Raiyat should be supported for education	Budget for Support for education of 02 children of Raiyat Rs 0.50 lakh will be spent as recurring Cost.	It will be done within 1 Year after getting Environmental Clearance.
10	Proper help and clothes should be given on the occasion of marriage and festivals	Budget for distribution of appropriate assistance and clothes on the occasion of marriages and festivals Rs. 1.0 lakh will be spent as recurring Cost.	It will be done within 1 Year after getting Environmental Clearance.

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.58 ha/1450	1450
2	Along Approach Road	0.230 km	460
3	Plants distributed in schools, Anganwadi or in Panchayat Bhawan	--	100 +500 plants (Additional as per Public Hearing Suggestion)







- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP:

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	..	4,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	—	50,000 40,000 20,000 10,000
3	Plantation	12,55,000	1,00,000
4	Construction and maintenance of haul road	2,00,000	1,50,000
Suggestions As per Public Hearing			
5	Budget for fencing around the mine site	3,00,000	1,00,000
6	Medical facilities for the villagers (such as medical health camps and distribution of medicines)	-	1,50,000
7	Drinking water facilities (Installation of Hand pump with deep boring) at public place in village	1,00,000	30,000
8	Budget for ambulance facilities	-	2,00,000
9	Budget for drain construction	50,000	20,000
10	Budget for Support for education of 02 children of Raiyat.	-	50,000
11	Budget for distribution of appropriate assistance and clothes on the occasion of marriages and festivals	-	1,00,000
12	Budget for Deep boring for Tube well	1,30,000	30,000
TOTAL		20,35,000	14,50,000

Note: * 2510 plants * 500 Rs (for each plants including hedges and fences)= Rs. 12,55,000/-

Salary of Labor for haul road maintenance 1 labor*300 = 300 per day

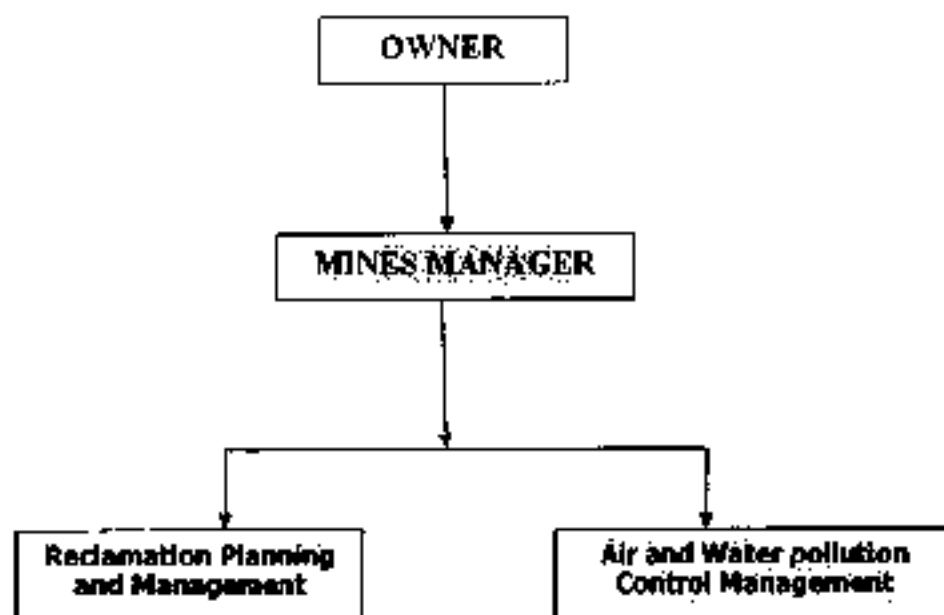
300* 300 = 90,000/- ~1,50,000/- (Including Maintenance)

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

Total 5051.00 cum waste generated during this Mining Plan period, so there is no requirement of waste dumping Plan for this mining plan but it will be used for village road and approach road maintenance.



Organization Structure

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be

constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside

- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe

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		activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard Identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage	Unintended	Very	Catastrophic	5

	of Explosives	Explosion	Unlikely		
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling

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- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

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The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

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- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidli etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

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- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.








- I. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from Injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Pratappur Stone Deposit of M/s B.M. Stone Works (Partners : Morful Haque & Belal Sheikh), Village : Pratappur, P.S. : Hiranpur, Distt. : Pakur, Jharkhand (2.44 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLEET, Audiometry and other required tests . Summary findings of same to be submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Falling of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

21. Piparjoria Stone Deposit of Shri Ram Lakshman Yadav, Village : Piparjoria, Thana : Hiranpur, Distt. : Pakur, Jharkhand (2.16 Ha).

(Proposal No : SIA/JH/MIN/ 502066/2024)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 24.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 50720 cum/annum or 136944 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Piparjoria Stone Deposit
2	Lessee:	Sri Ram Lakshman Yadav, S/o Sri Bhim Yadav
3	Lease Address	Village – Piparjoria, P.S. – Hiranpur, District – Pakur, Jharkhand
4	Lease Area	2.16 Ha. Acres- 5.33 Acres
5	Type of Land	Non-Forest (Raiyati Land)
6	Project Cost	Rs. 120 lakhs
7	EMP Budget	Capital: Rs. 11.05 Lakhs Recurring: 4.87 Lakhs/year
8	New or Expansion	New
9	Mineable Reserves	1364715 tons 505450 cum
10	Mine Life	10 years
11	Man power	20
12	Water Requirement	8.8 ~ 9.0 KLD (Drinking: 0.20 KLD, Dust Suppression: 4.58 KLD, Plantation: 4.02 KLD)
13	Water Source	Water will be taken from nearby village
14	DG Set / power	500 KVA
15	Crusher	No Crusher
16	Nearest Water Body	Torai River, Approx. 4.79 km in NE direction.
17	Nearest Habitation	Daldafi, Approx. 0.61 km in SE Direction.
18	Nearest Railway Station	Pakur Railway station, approx. 14.02 km in East direction.
19	Nearest Air Port	Deoghar Airport, approx. 104.43 km towards West direction.
20	Nearest Forest	Protected Forest, Approx. 4.50 km. in SE direction of mine site. Protected Forest, Approx. 4.10 km. in ESE direction of mine site.
21	Road & Highways	NH-133A, Approx. 4.69 km in NE direction.

CO-ORDINATES

1	Latitude	From 24°37'41.71"N To 24°37'48.33"N
2	Longitude	From 87°42'59.97"E To 87°43'06.53"E

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LAND DETAILS

Khata no.	Plot no.
10	132 (P)
26	146 (P)
14	147 (P)
06	148 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 1564/M, dated 21.09.2024.
2	CO	:	The CO, Hiranpur vide letter no. 196/Ra., dated 16.04.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyon & Register II.
3	DMO	:	DMO, Pakur vide memo no. 1650/M, dated 28.09.2024 certified that OILOI (5.50 Acre) exists within 500 meters radius from proposed project site and total area is 10.83 Acre or 4.38 Ha.
4	DFO Wild Life	:	DFO -cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2042, dated 12.10.2023 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide memo no. 1118, dated 14.08.2023 certified that the distance of forest is 680meters from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 1649/M, dated 28.09.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 96, Page no. 119).
7	Gram Sabha	:	BDO, Hiranpur vide letter no. 604/Vi., dated 03.07.2024 informed that Gram Sabha conducted on 02.07.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 1779/M, dated 17.10.2024.
9	Qualified Person	:	Shri Tapan Kumar Chakravarty through e-mail dated 24.10.2024 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized method	
2	Quarry Area	:	2.16 ha or 5.33 Acres	Life of Mine – 10 Years
3	Waste Generation	:	Total 4050.00 cum of Waste will be generated during the plan period	
4	Stripping Ratio	:	1: 0.01	
5	Working Days	:	300	
6	Bench: size & No	:	6m x 6m	
7	Elevation of Mine	:	90 AMSL to 85 AMSL	
8	Ground Level Elevation	:	85 AMSL	
9	Ultimate Working Depth	:	50 AMSL (35 mbgl)	
10	Water Table	:	37-35 AMSL (50-48 mbgl)	
11	Topography of Mine	:	Area represents undulating topography	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	110 litre/day	

Production Details

Year	Production of stone in Cum	Production of stone in Tonnes	Waste (cum) in plan period	Bench AMSL
1st	47220.00	127494.00	3158.00	90 - 80
2nd	48870.00	131949.00	892.00	86 - 80
3rd	50640.00	136728.00	.	86 - 74
4th	49920.00	134784.00	.	80 - 74
5th	50720.00	136944.00	.	80 - 68
Total	247370.00	667899.00	4050.00	

Land Use

Type of land use	Existing (Ha)	At the End of Plan Period (Ha)	During Conceptual Period/ after closure of Mines (Ha)
Existing Quarry	Nil	1.70	1.70 (Entire area will be use for rain water Harvesting)
Roads	Nil	Comes Under quarry	
Safety Barrier	Nil	0.46 (Plantation)	0.46 (Plantation)
Total Area in use	0.00	2.16	2.16
Area which will remain untouched	2.16	--	--
Total	2.16	2.16	2.16

ENVIRONMENT MANAGEMENT**Green Belt Development**

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.46 ha	1150
2	Along Approach Road	:	380 m	760
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	—	14,000 8,000 8,000 7,000
3	Plantation	10,05,000	1,00,000
4	Construction and maintenance of haul road	1,00,000	1,50,000
TOTAL		11,05,000	4,87,000

*Note: *2010 plants * 500 Rs (for each plants including hedges and fences) = 10.05 lakhs*

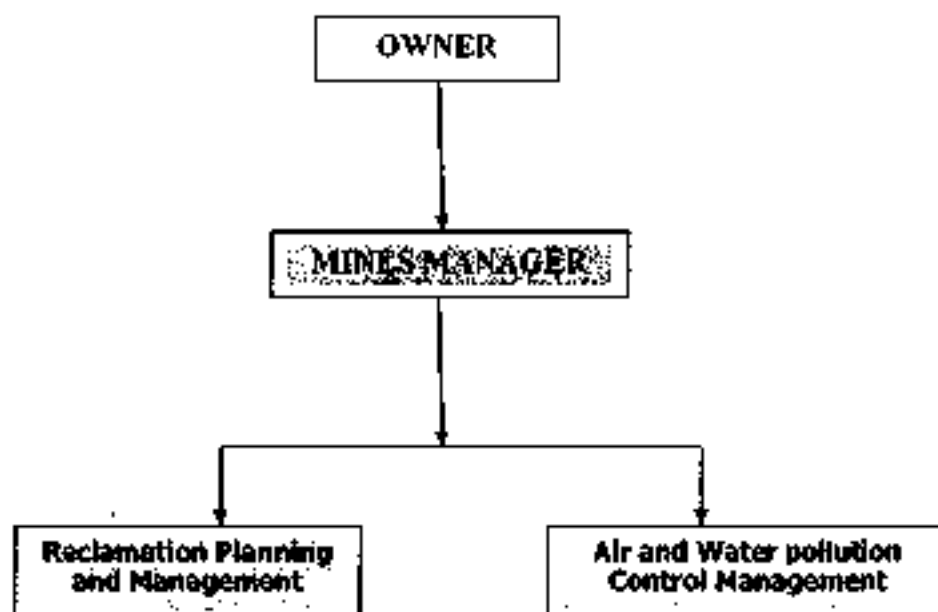
*Salary of Labor for haul road maintenance 1 labor*300 =300 per day*

*300*300 = 90,000/- or 1,50,000/- (including maintenance)*

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly

4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly



Organization Structure

Solid Waste Management

Total 4050.00 cum of Waste will be generated during the plan period which is used for village & haul road maintenance.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask etc shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment

C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard Identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock	Occasional	Major	6

		(Bodily Injury)			
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department.

Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.

- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.

- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
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- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.

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1. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Piparjoria Stone Deposit of Shri Ram Lakshman Yadav, Village : Piparjoria, Thana : Hiranpur, Distt. : Pakur, Jharkhand (2.16 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.



22. Piparjoria Stone Deposit of Shri Ram Lakshman Yadav, Village : Piparjoria, Thana : Hiranpur, Distt. : Pakur, Jharkhand (2.75 Ha).

(Proposal No : SIA/JH/MNH/ 502123/2024)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 24.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Terms of Reference (ToR) as per EIA notification, 2006.

TOR Application for: Proposed Capacity- 66360 cum/annum or 179172 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Piparjoria Stone Deposit
2	Lessee:	: Sri Ram Lakshman Yadav, S/o Sri Bhim Yadav,
3	Lease Address	: Village –Piparjoria, P.S.– Hiranpur, District – Pakur, Jharkhand
4	Lease Area	: 2.75 ha Acres- 6.80 Acres,
5	Type of Land	: Non- Forest (Raiyati Land)
6	Project Cost	: Rs. 120 Lakhs
7	EMP Budget	: Capital: Rs. 11.725 lakhs Recurring: Rs. 5.70 Lakh/year
8	New or Expansion	: New
9	Mineable Reserves	: cum.: 659260 cum Tonnes: 1780002 tons
10	Mine Life	: 9.93 or 10 years
11	Man power	: 20
12	Water Requirement	: 9.2 ~9.50 KLD (Drinking: 0.20 KLD, Dust Suppression: 4.71 KLD, Plantation: 4.29 KLD)
13	Water Source	: Water will be taken from nearby village
14	DG Set / power	: 500 KVA
15	Crusher	: No crusher
16	Nearest Water Body	: Pargana Nadi, Approx. 4.62 km. in NNE direction of mine site
17	Nearest Habitation	: Piparjoria, Approx. 0.37 km in NE direction.
18	Nearest Rail Station	: Pakur Railway station, approx. 13.72 km In East direction.
19	Nearest Air Port	: Deoghar Airport, approx. 104.50 km towards West direction.
20	Nearest Forest	: Protected Forest, Approx. 4.50 km. in SE direction of mine site. Protected Forest, Approx. 4.10 km. in ESE direction of mine site.
21	Road & Highways	: NH-133A, Approx. 4.34 km In NE direction.

CO-ORDINATES

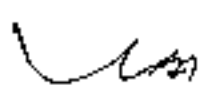
1	Latitude	From 24°37'50.02" N	To 24°37'57.00" N
2	Longitude	From 87°43'06.52"E	To 87°43'15.15" E

LAND DETAILS

Khata no.	Plot no.
22	118, 119 (P) & 121 (P)
02	120 (P) & 122
23	173 & 174 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LOI) has been Issued by District Mining Officer, Pakur vide memo no. 1663/M. dated 28.09.2024.
2	CO	:	The CO, Hiranpur vide letter no. 195/Ra., dated 16.04.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyar & Register II.
3	DMO	:	DMO, Pakur vide memo no. 1773/M, dated 17.10.2024 certified that 02 LOI (5.50 Acre & 5.33 Acre) exists within 500 meters radius from proposed project site and total area is 17.63 Acre or 7.13 Ha.
4	DFO Wild Life	:	DFO -cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2043, dated 12.10.2023 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide memo no. 1117, dated 14.08.2023 certified that the distance of forest is 695 meters from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 1774/M, dated 17.10.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 96, Page no. 119).
7	Gram Sabha	:	BDO, Hiranpur vide letter no. 605/Vi., dated 03.07.2024 informed that Gram Sabha conducted on 02.07.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 1780/M, dated 17.10.2024.








9	Qualified Person	Shri Tapan Kumar Chakravarty through e-mail dated 24.10.2024 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	Opencast Mechanized method
2	Quarry Area	2.75 ha Life of Mine – 9.93 or 10 years
3	Waste Generation	5615.00 cum
4	Stripping Ratio	1: 0.01
5	Working Days	300
6	Bench: size & No	6m to 6m
7	Elevation of Mine	79 AMSL to 80 AMSL
8	Ground Level Elevation	79 AMSL
9	Ultimate Working Depth	Up to 50 AMSL (29 mgbf)
10	Water Table	37-35 AMSL (44-42 mgbf)
11	Topography of Mine	The area represents undulating topography
12	Explosive Requirement	110 kg/day
13	Diesel/Fuel requirement	140 litre/day

Production Details

Year	Production of stone in Cum	Production of stone in Tonnes	Waste (cum) in plan period	Bench AMSL
1st	60390.00	163053.00	2463.00	80-74
2nd	63000.00	170100.00	3152.00	80-74
3rd	66300.00	179010.00	-	74-68
4th	66100.00	178470.00	-	74-68
5th	66360.00	179172.00	-	68-62
Total	322150.00	869805.00	5615.00	

Land Use

Type of Land	Present Land Use (In Ha)	At the End of the Five year Plan Period (In Ha)	At the End of Conceptual stage (In Ha.)
Quarry	--	2.18	2.18 (Entire area will be converted into rain

			water Harvesting)
Road	0.01	Comes Under quarry	
Greenbelt within Safety Barrier	--	0.57 (Plantation)	0.57 (Plantation)
Total Area in use	0.01	2.75	2.75
Balanced Unused Area	2.74	--	--
Total Applied Area	2.75	2.75	2.75

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.57 ha	1425
2	Along Approach Road	:	310 m	620
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	50,000 40,000 20,000 10,000
3	Plantation	10,72,500	1,00,000
4	Construction and maintenance of haul road	1,00,000	1,50,000
TOTAL		11,72,500	5,70,000

Note: *2145 plants * 500 Rs (for each plants including hedges and fences) = 10.725 lakhs

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

300* 300 = 90000/- or 150000/- (including maintenance)

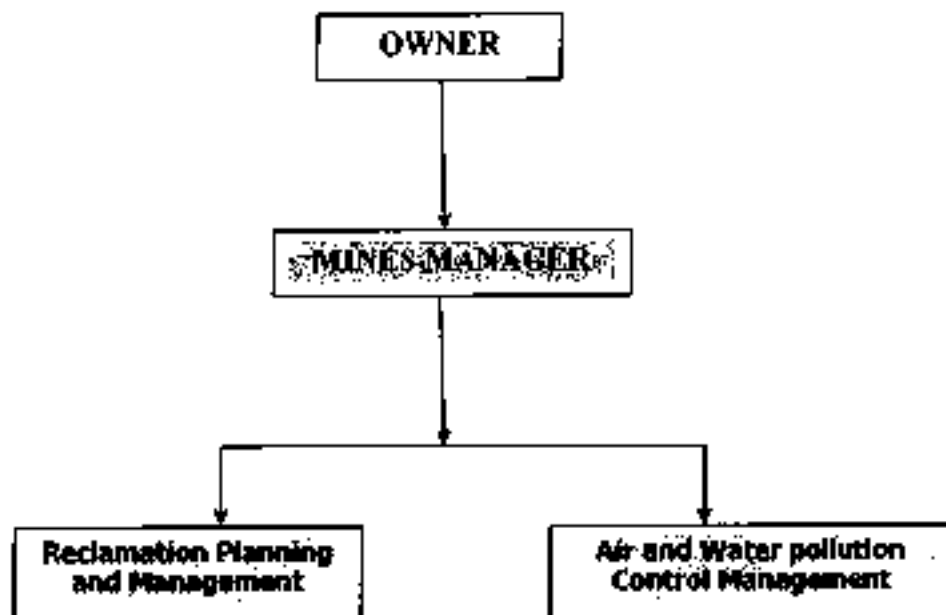
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Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

Total 5615.00 cum of Waste will be generated during the plan period. Waste generated during this plan period which is used for village & haul road maintenance.



Organization Structure

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.

- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

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Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard Identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the Initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming

vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling that necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.

- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 22, 23, 24, 25 & 26.10.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith following specific condition :-

- i. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).

23. Piparjoriya Stone Deposit of M/s Sundar Stone Product (Prop. : Shri Satish Kumar Lakhmani), Mouza : Piparjoria, Thana : Hiranpur, Distt. : Pakur, Jharkhand (2.817 Ha).

(Proposal No : SIA/JH/MIN/ 502112/2024)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 24 10 2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 48638 cum/annum or 145914 TPA

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Piparjoriya Stone Deposit
2	Lessee:	M/s Sundar Stone Product Proprietor – Sri Satish Kumar Lakhmani At Village – Sindhipara, Pakur, Thana – Pakur, Jharkhand - 816107
3	Lease Address	Mauja– Piparjoriya, Thana – Hiranpur, District – Pakur, Jharkhand

4	Lease Area	:	2.817 ha.	Acres- 6.96 Acres
5	Type of Land	:	Non-Forest (Rajyati Land)	
6	Project Cost	:	Rs. 130.0 Lakhs	
7	EMP Budget	:	Capital: Rs. 10.75 Lakhs	Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	486235 cum	1458704 tonnes
10	Mine Life	:	10 years	
11	Man power	:	27	
12	Water Requirement	:	8.01 ~ 8.50 KLD (Drinking: 0.27 KLD, Dust Suppression: 3.84 KLD, Plantation: 3.90 KLD)	
13	Water Source	:	Water will be taken from nearby village	
14	DG Set / power	:	500 KVA	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	Torai Nadi, approx. 4.48 km towards NNE direction of mine site	
17	Nearest Habitation	:	Piparjoriya village approx. 500 meters NNE direction of mine site	
18	Nearest Railway Station	:	Pakur Railway station, approx. 13.23 km towards ENE direction.	
19	Nearest Airport	:	Deoghar Airport, approx. 105.0 km towards West direction	
20	Nearest Forest	:	Protected Forest, approx. 2.50 Km in East direction. Protected Forest, approx 2.35 Km in SE direction Protected Forest, approx 3.90 Km in SE direction. Protected Forest, approx 4.20 Km in SW direction of mine site.	
21	Road & Highways	:	NH-133A - Approx. 4.27 km in NE direction.	

CO-ORDINATES

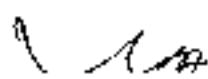
1	Latitude	:	From 24°37'38.730" N	To 24°37'45.202" N
2	Longitude	:	From 87°43'19.290" E	To 87°43'31.844" E

LAND DETAILS

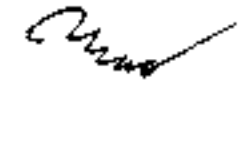
Khata no.	Plot no.
17	217 & 228 (P)
14	218 (P)
22	219 (P)
18	220 & 221 (P)
09	222 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining





		Officer, Pakur vide memo no. 1424/M, dated 05.09.2024.
2	CO	The CO, Hiranpur vide letter no. 59/Ra., dated 06.02.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatyan & Register II.
3	DMO	DMO, Pakur vide memo no. 1554/M, dated 20.09.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site and total area is 6.96 Acre or 2.82 Ha.
4	DFO Wild Life	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1257, dated 26.06.2024 certified that the proposed project site is outside Eco Sensillve Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	Division Forest Officer, Pakur Forest Division vide letter no. 390, dated 06.03.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	The DMO, Pakur has been certified vide memo no. 1555/M, dated 20.09.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 96, Page no. 119).
7	Gram Sabha	BDO, Hiranpur vide letter no. 287/Vi., dated 06.03.2024 informed that Gram Sabha conducted on 02.03.2024.
8	Mine Plan Approval	Approved by District Mining Officer, Pakur vide Memo No. 1778/M, dated 17.10.2024.
9	Qualified Person	Shri Tapan Kumar Chakravarty through e-mail dated 24.10.2024 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast mechanized method.	
2	Quarry Area	:	2.817 ha. or 6.96 Acres	Life of Mine – 10 Years
3	Waste Generation	:	16882 cum of Gritty Soil and 12795 cum of Intercalated Waste.	
4	Stripping Ratio	:	1: 0.2	
5	Working Days	:	300	
6	Benchs: size & No	:	6m x 6m	
7	Elevation of Mine	:	90 AMSL to 99 AMSL	
8	Ground Level Elevation	:	90 AMSL	
9	Ultimate Working Depth	:	51 AMSL (39 mbgl)	
10	Water Table	:	43-38 AMSL (52-47 mbgl)	
11	Topography of Mine	:	Basaltic terrain of Rajmahal hills. A gently sloping land	

			with rock mass of Basalt.
12	Explosive Requirement	:	110 kg/day
13	Diesel/Fuel requirement	:	150 litre/day

Production Details

Year	Removal of Gritty Soil		Intercalated waste in Cum	Production of Stone		Bench AMSL
	In cum	In tonnes		In Cum	In tonnes	
1st	14504	21756	2557	48598	145793	99-87
2nd	000	000	2560	48638	145914	93-87
3rd	000	000	2559	48623	145870	93-81
4th	2378	3567	2560	48638	145914	87-75
5th	000	000	2559	48623	145870	81-69
Total	16882	25323	12795	243120	729361	

Land Use

Pattern of Utilization	Present Land Use (Ha.)	At the end of Plan Period (Ha.)	At the end of mine (Ha.)	Conceptual Period (in Ha.)		
				Public Use	Water Body	Plantation
Quarry	Nil	1.289	2.133 ha (0.377 Ha area shall be backfilled and after backfilling entire area will be converted into water reservoir)	---	2.133	---
Greenbelt within Safety Barrier	Nil	0.684 (Plantation)	0.684 (Plantation)	---	---	0.684
Road	0.010	0.009	Nil	---	---	---
Dump	Nil	0.584	Nil	---	---	---
Parapet Wall	Nil	0.015	Nil	---	---	---

Garland Drain	Nil	0.017	Nil	---	---	---
Total Area in Use	0.010	2.598	2.817	---	2.133	0.684
Balanced Area unused	2.807	0.219	Nil	---	---	---
Total Applied Area	2.817	2.817	2.817	2.817		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.684 ha	1710
2	Along Approach Road	:	70 m	140
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule Issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs)	Recurring Cost (Rs)
1	Pollution Control & Dust Suppression	Nil	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	14,000 8,000 8,000 7,000
3	Plantation	9,75,000	1,00,000
4	Construction and maintenance of haul road	1,00,000	1,50,000
TOTAL		10,75,000	4,87,000

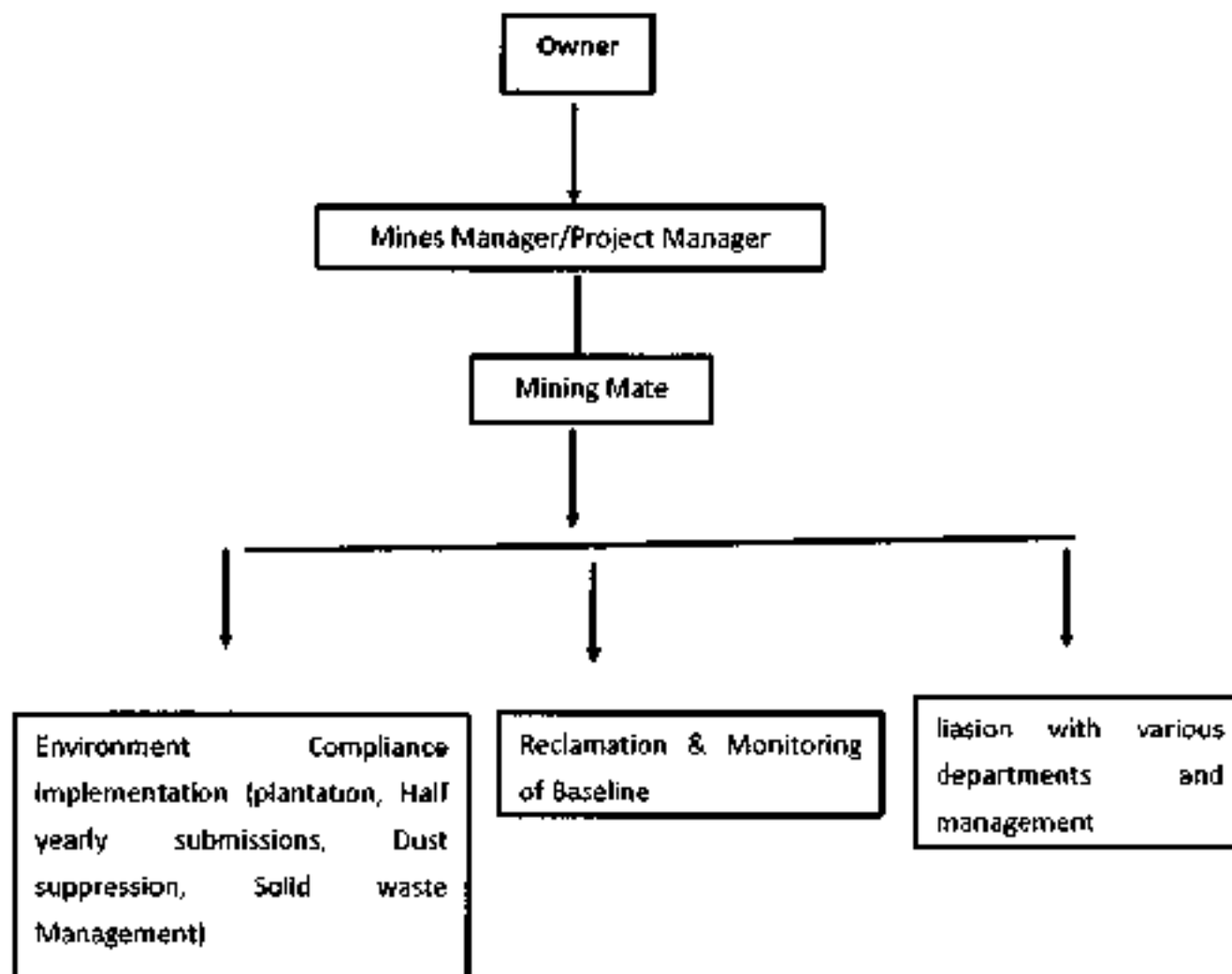
Note: *1950 plants*500 Rs (for each plants including hedges and fences) = Rs. 9.75 lakhs

Salary of labor for haul road maintenance 1 labor*300 =300 per day
 300* 300 = 90000/- or 150000/- (including maintenance)

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Environment management cell



FUNCTIONS OF ENVIRONMENT MONITORING CELL

- Supervision: Managed by Mines Manager with a qualified technical team.
- Personnel: Includes skilled, semi-skilled, unskilled, and other third parties.
- Responsibilities:
 - ✓ Implement environmental control measures.
 - ✓ Oversee reclamation planning and management.

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- ✓ Manage air and water pollution control.
- ✓ Liarse with state and central statutory agencies.
- ✓ Develop greenbelt areas.
- Performance Review: Assess corporate environmental performance and report non-compliances.
- Remedial Actions: Suggest and implement actions for exceeding pollution limits.
- Coordination:

Collect health statistics for workers and local population.

Act as a bridge for project implementation and Project Authorities

Facilitate afforestation efforts.

Solid Waste Management

Total 12795 cum Intercalated waste and 16882 Cum Gritty Soil shall be generated during the plan period. During quarry development in 1st year gritty soil and intercalated waste will be removed and this soil & waste will be temporarily dumped [Area - 0.341 Ha, (L x W x H = 90m x 38m x 5m)] at the east part of the area with suitable precautions like parapet wall, garland drain & in 2nd, 3rd, 4th & 5th year intercalated waste will be removed and this waste will be temporarily dumped [Area - 0.051 Ha, (L x W x H = 43m x 12m x 5m), Area - 0.051 Ha, (L x W x H = 51 m x 10m x 5m), Area - 0.051 Ha, (L x W x H = 51 m x 10m x 5m) & Area - 0.051 Ha, (L x W x H = 57m x 9m x 5m)], at the east part of the area with suitable precautions like parapet wall, garland drain. In conceptual period total removal soil, intercalated waste & plan period existing temporarily dumped materials will be backfill within the exhausted quarry.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.

- Sharp drill bits will be used for drilling and regrounding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel

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C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard Identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping	Probable	Moderate	6

		(Bodily Injury)			
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the Inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.

- ◆ Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- ◆ All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- ◆ The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- ◆ Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- ◆ To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- ◆ Only trained drivers will be hired.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report Issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.

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- I. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee In the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Piparjoriya Stone Deposit of M/s Sundar Stone Product (Prop. : Shri Satish Kumar Lakhmani), Mouza : Piparjoria, Thana : Hiranpur, Distt. : Pakur, Jharkhand (2.817 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

24. Barhabad Stone Deposit of M/s Dhihi Realtors Pvt. Ltd., Mouza : Barhabad, Thana : Pakur,
Distt. : Pakur, Jharkhand (0.97 Ha).

(Proposal No : SLA/JH/MIN/ 502076/2024)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 24.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 15021 cum/annum or 45064 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Barhabad Stone Deposit
2	Lessee:	: M/s Dhihi Realtors Pvt. Ltd. Directors – 1. Sri Subhankar Saha, 2. Sri Souvik Saha 3. Sri Abhik Saha, AT- Plot-101/108, Metropolis Sec-B, Telephone Exchange, Dhapa, District- North 24 Pargana, State –West Bengal, Pin Code – 700105
3	Lease Address	: Mauja- Barhabad, Thana – Pakur, District – Pakur, Jharkhand
4	Lease Area	: 0.97 ha. Acres- 2.40 Acres
5	Type of Land	: Non-Forest (Raiyati Land)
6	Project Cost	: Rs. 50.0 Lakhs
7	EMP Budget	: Capital: Rs. 11.50 Lakhs Recurring: 4.87 Lakhs / year
8	New or Expansion	: New
9	Mineable Reserves	: 75016 cum 225048 tonnes
10	Mine Life	: 05 years
11	Man power	: 26
12	Water Requirement	: 9.26 ~ 10.00 KLD (Drinking: 0.26 KLD, Dust Suppression: 4.92 KLD, Plantation: 4.08 KLD)
13	Water Source	: Water will be taken from nearby village
14	DG Set / power	: 500 KVA
15	Crusher	: No Crusher
16	Nearest Water Body	: Torai Nadi, approx. 6.05 km towards North direction of mine site.
17	Nearest Habitation	: Barhabad village approx. 500 meters NE direction of mine site
18	Nearest Railway Station	: Pakur Railway station, approx. 6.95 km towards ENE direction.
19	Nearest Airport	: Deoghar Airport, approx. 112.09 km towards West direction.
20	Nearest Forest	: Protected Forest, approx. 2.50 Km in NW direction. Protected Forest, approx 4.20 Km in NW direction. Protected Forest, approx 4.50 Km in West direction. Protected Forest, approx 4.90 Km in SE direction of mine site

21	Road & Highways	:	NH-133A - Approx. 4.50 km in NNE direction.

CO-ORDINATES

1	Latitude	:	From 24°36'23.54512" N	To 24°36'28.21591" N
2	Longitude	:	From 87°47'24.35795" E	To 87°47'30.07838" E

LAND DETAILS

Khata no.	Plot no.
8	1173 & 1174
5	1182 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by DMO, Pakur vide memo no. 1624/M, dated 26.09.2024.
2	CO	:	The CO, Pakur vide letter no. 1599/Ra. dated 23.12.2023 has mentioned the plot no. of the project is not recorded as "Jungle Jharl" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Pakur vide memo no. 1709/M, dated 09.10.2024 certified that one other mining lease area (6.00 Acre) exists within 500 meters radius from proposed project site and total area is 8.40 Acre or 3.40 Ha.
4	DFO Wild Life	:	DFO -cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no.: 2231, dated 07.11.2023 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	DFO, Pakur Forest Division vide memo no. 930, dated 01.07.2024 certified that the distance of notified forest is 260 meters from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 1708/M, dated 09.10.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 91, Page no. 150).
7	Gram Sabha	:	BDO, Pakur vide letter no. 05/Vi., dated 03.01.2024 informed that Gram Sabha conducted on 14.11.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 1776/M, dated 17.10.2024.

9	Qualified Person : :	Shri P.K. Sen was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast mechanized method.	
2	Quarry Area	:	0.97 Ha. or 2.40 Acre	Life of Mine – 05 Years
3	Waste Generation	:	6766 cum of Gritty Soil and 3948 cum of Intercalated Waste	
4	Stripping Ratio	:	1: 0.7	
5	Working Days	:	300	
6	Bench: size & No	:	6m x 6m	
7	Elevation of Mine	:	88 AMSL to 90 AMSL	
8	Ground Level Elevation	:	88 AMSL	
9	Ultimate Working Depth	:	66 AMSL (22 mbgl)	
10	Water Table	:	58-53 AMSL (30-35 mbgl)	
11	Topography of Mine	:	Moderately sloping land with rock mass of Basalt.	
12	Explosive Requirement	:	70 kg/day	
13	Diesel/Fuel requirement	:	100 litre/day	

Production Details

Year	Removal of Gritty Soil		Intercalated waste in Cum	Production of Stone		Bench AMSL
	In cum	In tonnes		In Cum	In tonnes	
1st	2650	3975	789	14954	44860	90-78
2nd	1050	1575	789	14995	44983	90-72
3rd	3066	4599	790	15011	45032	90-84
4th	000	1875	791	15021	45064	84-78
5th	000	000	790	15011	45032	78-66
Total	6766	12024	3948	74992	224971	

Land Use

Pattern of Utilization	Present Land Use (Ha)	At the end of Plan period (Ha)	At the end of mine (Ha)	Conceptual Period (In Ha)		
				Public Use	Water Body	Plantation
Quarry	Nil	0.61 (Including backfill 0.17 Ha.)	0.61 (0.17 Ha. ha area shall be backfilled and after backfilling entire area will be converted into water reservoir)	---	0.61	---

Greenbelt within Safety Barrier	Nil	0.36 (Plantation)	0.36 (Plantation)	---	---	0.36
Road	0.009	Nil	Nil	---	---	---
Total Area in Use	0.009	0.97	0.97	---	0.61	0.36
Balanced Area unused	0.961	Nil	Nil	---	---	---
Total Applied Area	0.97	0.97	0.97	0.97		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.36 ha	900
2	Along Approach Road	:	520 m	1040
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs)	Recurring Cost (Rs)
1	Pollution Control & Dust Suppression	Nil	2,00,000
2	Baseline Monitoring		
	i) Air		14,000
	l) Water	—	8,000
	li) Soil		8,000
	iv) Noise		7,000
3	Plantation	10,20,000	1,00,000

4	Construction and maintenance of haul road	1,30,000	1,50,000
TOTAL		11,50,000	4,87,000

Note: *2040 plants * 500 Rs (for each plants including hedges and fences) = 10.20 Lakh

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

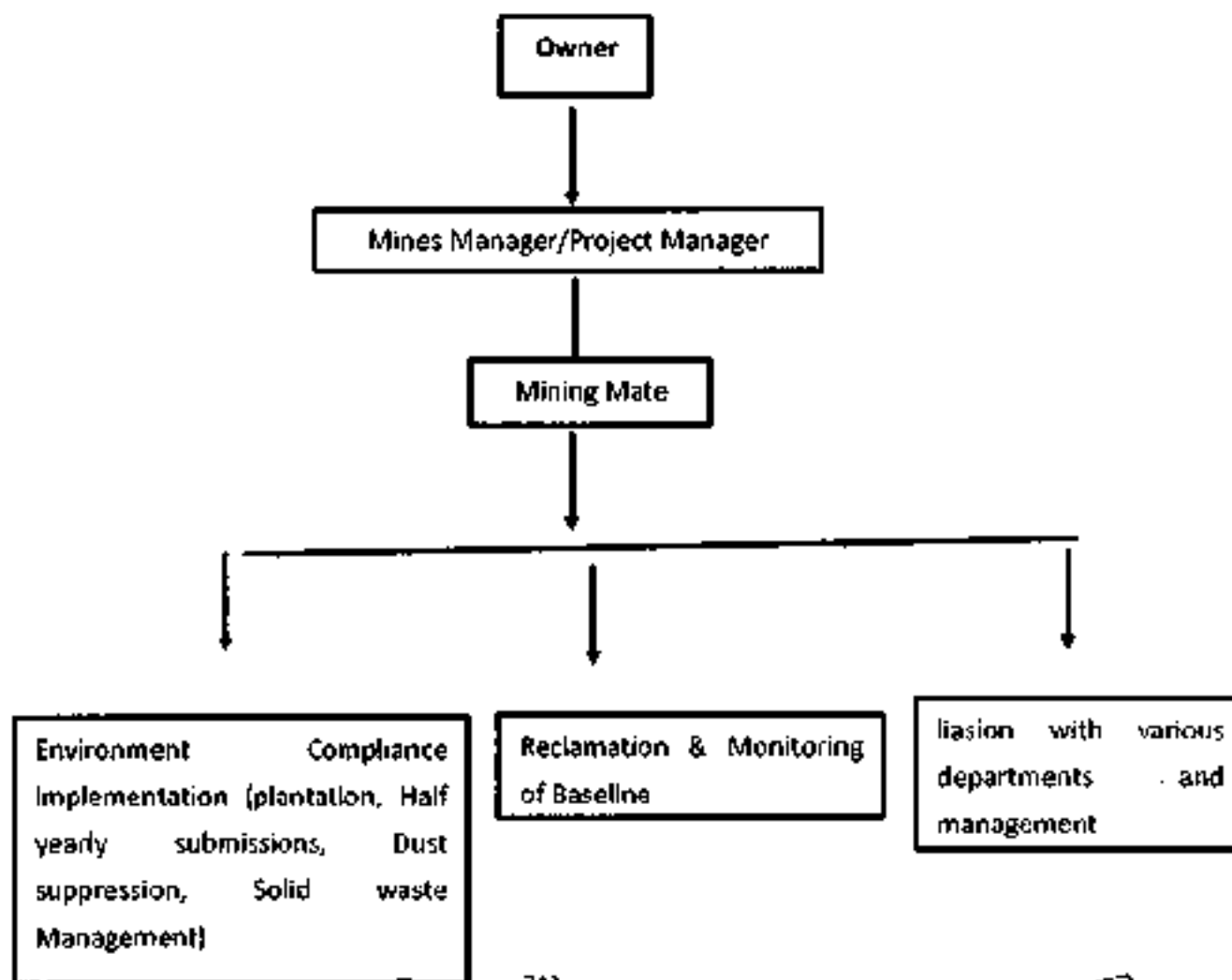
300* 300 = 90000/- or 1,50,000/- (including maintenance)

* 2.5 lakh per kilometer (250000 * 0.52 km haul road = 1,30,000/-)

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Environment management cell



FUNCTIONS OF ENVIRONMENT MONITORING CELL

- **Supervision:** Managed by Mines Manager with a qualified technical team.
- **Personnel:** Includes skilled, semi-skilled, unskilled, and other third parties.
- **Responsibilities:**
 - ✓ Implement environmental control measures.
 - ✓ Oversee reclamation planning and management.
 - ✓ Manage air and water pollution control.
 - ✓ Liaise with state and central statutory agencies.
 - ✓ Develop greenbelt areas.
- **Performance Review:** Assess corporate environmental performance and report non-compliances.
- **Remedial Actions:** Suggest and Implement actions for exceeding pollution limits.
- **Coordination:**

Collect health statistics for workers and local population.

Act as a bridge for project implementation and Project Authorities

Facilitate afforestation efforts.

Solid Waste Management

It has been calculated that total 6766 cum of Gritty Soil and 3948 cum of Intercalated Waste shall be generated during the plan period. The area is covered with a layer of gritty soil. During quarry development in 1st & 2nd year gritty soil and intercalated waste will be removed and this gritty soil & waste will be temporarily dumped [area -0.068 Ha, (L x W x H = 30m x 23m x 5m) & area 0.036 (L x W x H = 21m x 18m x 5m) at the north east part of the area with suitable precautions like parapet wall, garland drain & in 3rd year total removal gritty soil and intercalated waste & existing temporarily dumped materials will be temporarily within quarry & in 4th year removed intercalated waste, existing temporarily dumped materials will be temporarily dumped within the quarry & in 5th year removed intercalated waste & existing dumped materials will be backfill within the lower bench of the exhausted quarry.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside

- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.

C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard Identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5

2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling

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- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work

in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine

- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.

- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.

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- I. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Barhabad Stone Deposit of M/s Dhihi Realtors Pvt. Ltd., Mouza : Barhabad, Thana : Pakur, Distt. : Pakur, Jharkhand (0.97 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to be submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Falling of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

25. Manglapara Stone Deposit of MPM Stone Works (Partners : (i) Shri Prabhakar Kumar Sinha (ii) Shri Manoj Kumar Gond (iii) Mr. Mukhleshur Alam), Mauza : Manglapara, Thana : Pakur, Distt. : Pakur, Jharkhand (2.48 Ha).

(Proposal No : SIA/JH/MIN/ 502079/2024)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 24.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 47742 cum/annum or 128904 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Manglapara Stone Deposit
2	Lessee:	M/s MPM Stone Works Partner- Sri Prabhakar Kumar Sinha, Sri Manoj Kumar Gond & Mukhleshur Alam
3	Lease Address	Mauza – Manglapara, Thana –Pakur, District – Pakur, State– Jharkhand
4	Lease Area	2.48 ha. Acres- 6.123 Acres
5	Type of Land	Non-Forest (Balyati Land)
6	Project Cost	Rs. 80 Lakhs
7	EMP Budget	Capital: Rs. 19.15 Lakhs Recurring: 4.87 Lakhs / year
8	New or Expansion	New
9	Mineable Reserves	1170884 tons 433660.74 cum
10	Mine Life	9.1 or 10 years
11	Man power	18
12	Water Requirement	15.28~16.00KLD (Drinking: 0.18 KLD, Dust Suppression: 8.36 KLD, Plantation: 6.74 KLD)
13	Water Source	Water will be taken from nearby village
14	DG Set / power	500 KVA
15	Crusher	No Crusher
16	Nearest Water Body	Torai Nadi, Approx. 0.90 km. in N direction of mine site
17	Nearest Habitation	Approx. 260 meters in west direction.
18	Nearest Railway Station	Pakur Railway station, approx. 7.02 km in ESE direction
19	Nearest Air Port	Deoghar Airport, approx. 112.81 km towards WNW direction
20	Nearest Forest	Protected Forest, Approx. 4.85 km. in SW direction of mine site
21	Road & Highways	NH-133A, Approx. 1.17 km in South direction

CO-ORDINATES

1	Latitude	:	From 24° 34' 33.3625" N	To 24° 34' 42.4105" N
2	Longitude	:	From 87° 47' 22.3502" E	To 87° 47' 24.6812" E

LAND DETAILS

Khata no	Plot No
3	2350 (P)
11	2354, 2355
18	2341, 2344, 2345, 2347, 2348, 2349, 2351, 2352, 2353(P)
27	1031(P), 1034
46	2332(P)
63	2322(P)
84	2316(P), 2317(P), 2318(P), 2319, 2320, 2321, 2329(P), 2330(P), 2331(P), 2333(P), 2334(P), 2335(P), 2340, 2346
92	2323, 2324, 2325, 2326, 2337(P), 2338, 2339

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by DMO, Pakur vide memo no. 1713/M, dated 09.10.2024.
2	CO	:	The CO, Pakur vide letter no. 509/Ra. dated 08.05.2024 has mentioned the plot no. of the project is not recorded as "Jungle Jhari" in R.S. Khatyan & Register II and also mentioned that the habitation of 27 houses at a distance of 260 meters of proposed project site, accordingly PAs has submitted EMP for the same.
3	DMO	:	DMO, Pakur vide memo no. 1793/M, dated 18.10.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO -cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no.: 1207, dated 19.06.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	DFO, Pakur Forest Division vide letter no. 291, dated 15.02.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.

6	DSR	:	The DMO, Pakur has been certified vide memo no. 1794/M, dated 18.10.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 99, Page no. 150).
7	Gram Sabha	:	BDO, Pakur vide letter no. 411/Vl., dated 09.02.2024 informed that Gram Sabha conducted on 08.02.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 1802/M, dated 18.10.2024.
9	Qualified Person	:	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast semi-mechanized method	
2	Quarry Area	:	2.48 ha. or 6.123 Acres	Life of Mine – 9.1 or 10 Years
3	Waste Generation	:	Total 43700 cum.	
4	Stripping Ratio	:	1: 0.14	
5	Working Days	:	300	
6	Bench: size & No	:	6m x 6m	
7	Elevation of Mine	:	44 AMSL to 45 AMSL	
8	Ground Level Elevation	:	44 AMSL	
9	Ultimate Working Depth	:	12 AMSL (32 mbgl)	
10	Water Table	:	2-1 AMSL (42-43 mbgl)	
11	Topography of Mine	:	Area represents a small hillock.	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	150 litre/day	

Production Details

Year	Production of stone in Cum	Production of stone in Tonnes	Overburden in cum	Intercalated waste in Cum	Total Waste in Cum	Bench in AMSL
1st	43320	116964	11100	2280	13380	42-36
2nd	44080	119016	5700	2320	8020	42-30
3rd	46265	124916	0	2435	2435	30-24
4th	47742	128904	14950	2513	17463	42-36
5th	45643	123235	0	2402	2402	36-24
Total	227050	613035	31750	11950	43700	








Land Use

Land Utilization	Existing Land use (Ha)	At the end of plan period (Ha)	At Conceptual period (Ha)
Excavation	0.0	1.467	1.898 (0.160ha area shall be Backfilled, 1.738ha converted in to water reservoir)
Waste Dump	0.00	0.260	Nil (waste dump to be removed and backfilled)
Road	0.0	0.010	0.002
Infrastructure (Crusher)	0.0	0.0	0.0
Safety Zone	0.0	0.580 (Plantation)	0.580 (Plantation)
Total	0.00	2.317	2.48
Unused Area	2.48	0.163	0.0
Total Lease Area	2.48		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.580 ha	1450
2	Along Approach Road	:	910 m	1820
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)

1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	14,000 8,000 8,000 7,000
3	Plantation	16,85,000	1,00,000
4	Construction and maintenance of haul road	2,30,000	1,50,000
TOTAL		19,15,000	4,87,000

*Note: *3370 plants * 500 Rs (for each plants including hedges and fences)= 16.85 lakhs*

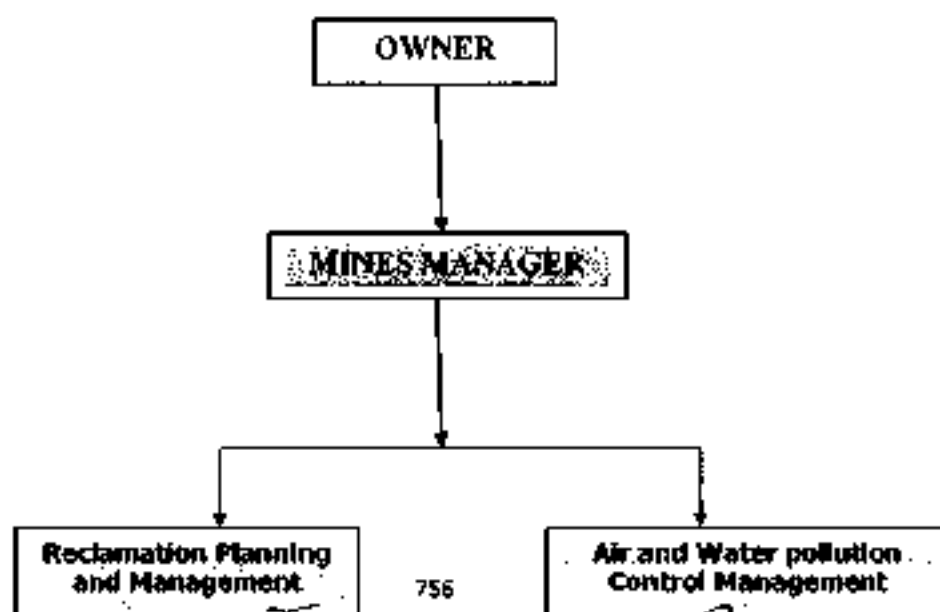
*Salary of Labor for haul road maintenance 1 labor*300 =300 per day*

*300*300 = 90,000/- or 1,50,000/- (including maintenance)*

** 2.5 lakh per kilometer (250000 * 0.91 km haul road = 2,27,500/- or 2,30,000/-)*

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly



Organization Structure

Solid Waste Management

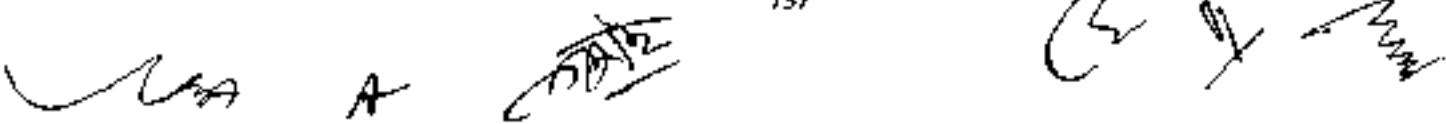
It has been calculated that total 43700 cum in-situ 54625 cum loose & 46431.25 cum compact waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 23215.63 cum (compact) shall be utilized for approach & haul road maintenance. The rest waste material (50%) i.e. 23215.63 cum waste shall be temporary dumped in north western part of the area and it will cover 0.260ha area.

Water Quality Management

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- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
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L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1

C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard Identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fail/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench

- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.

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- **Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.**
- **While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.**
- **The vibrations should be monitored periodically in consultation with the local Mining authorities.**

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- **Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.**
- **Poorly designed shots can result in misfires, early ignition and flying rock.**

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- **Proper and safe storage of explosives in approved and Licensed Magazine**
- **Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.**
- **Explosives shall be conveyed in special containers**
- **Explosives and detonators shall not be carried in the same container**
- **The holes which have been charged with explosives will not be left unattended till blasting is completed.**

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an

interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)

- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- The Boundary Pillars of the proposed mine lease area will be maintained properly.
- One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- If any tree felling than necessary permission shall be taken from the competent authority.
- Slope of the Water bodies to be stabilized using gablon plantation created at the end of life of the mine.
- Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC OJM dated 12.12.18 decided that the proposal for Manglapara Stone Deposit of MPM Stone Works (Partners : (i) Shri Prabhakar Kumar Sinha (ii) Shri Manoj Kumar Gond (iii) Mr. Mukhleshur Alam), Mauza : Manglapara, Thana : Pakur, Distt. : Pakur, Jharkhand (2.48 Ha) is recommended for grant of EC. The various conditions for grant of EC is endorsed as Annexure – II along with following specific conditions :

- In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and

the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).

- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to be submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

26. Basmata Stone Mine of M/s Chabaria Engineering Company (Partner : Shri Naresh Kumar Mandhyan), Village : Basmata, Thana : Pakur, Distt. : Pakur, Jharkhand (1.66 Ha).

(Proposal No : SIA/JH/MIN/ 500983/2024)

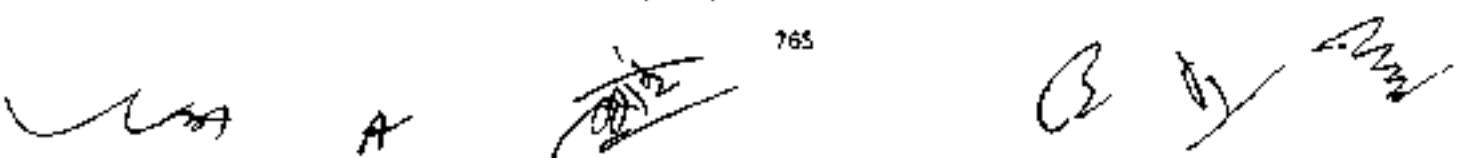
Name of the consultant : P & M Solution, Noida, U.P.

This is re-appraisal of the EC issued by DEIAA, Pakur which has been taken up for consideration on 28.09.2024. As per O.M. dated 12.12.2018 issued by MOEF & CC projects fall in category B1.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Terms of Reference (ToR) as per EIA notification, 2006.

ToR Application for: Proposed Capacity- 16700 cum/annum or 45090 TPA

The bottom of the page features several handwritten signatures and initials in black ink. From left to right, there is a long, flowing signature, a single letter 'A', a signature that appears to be 'Amit', and a group of three signatures on the right side, including one that looks like 'B' and another that is more complex.

As per O.M. dated 28th April 2023 Issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

The project has been granted EC by DEIAA, Pakur vide letter no. 03/DEIAA, dated 02.01.2017.

Existing baseline condition as per monitoring report submitted by PP is as follows PM₁₀ - 82.0µg/m³ PM_{2.5} - 44.0 µg/m³ SO₂ - 12.10 NO₂ - 27.09µg/m³. All the data are within the permissible limit.

Data generated by JSPCB empaneled Laboratory has been also submitted by PP. All the data are within prescribed limit.

Dust suppression is being carried out on regular basis.

Production detail as per memo no. 148/ M dated 29.01.2024 by DMO, Pakur is within the permissible limit of EC.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Basmata Stone Mine
2	Lessee:	M/s Chabaria Engineering Company Partner- Sri. Naresh Kumar Mandhyan
3	Lease Address	Village – Basmata, P.S. – Pakur, District – Pakur, State- Jharkhand
4	Lease Area	1.66 ha Acres- 4.094 Acres
5	Type of Land	Non-Forest (Baryati Land)
6	Project Cost	Rs. 1.30 cr.
7	EMP Budget	Capital: Rs. 15.20 Lakhs Recurring: 5.70 Lakhs / year
8	New or Expansion	New
9	Mineable Reserves	137644 tons 50979.25 cum
10	Mine Life	4 years
11	Man power	35
12	Water Requirement	16.45~ 17.00 KLD (Drinking: 0.35 KLD, Dust Suppression: 11.22 KLD, Plantation: 4.88 KLD)
13	Water Source	Water will be taken from nearby village
14	DG Set / power	200 KVA
15	Crusher	No Crusher
16	Nearest Water Body	--
17	Nearest Habitation	Basmata, Approx. 0.03 km in South direction
18	Nearest Railway Station	Pakur Railway station, approx. 5.90 km towards North direction
19	Nearest Air Port	Deoghar Airport, Deoghar approx 116.90 km towards West direction.
20	Nearest Forest	Protected Forest, Approx. 2.0 km towards SW direction of mine site.
21	Road & Highways	NH-133A, Approx. 5.80 km. in NE direction.

CO-ORDINATES

1	Latitude	:	From 24°35'3.130"N	To 24°35'11.114"N
2	Longitude	:	From 87°50'40.277"E	To 87°50'50.308"E

LAND DETAILS

Plot no.
17, 19, 20, 21, 35, 36, 38, 39, 40, 41, 55, 59 (P), 60, 61 & 62

STATUTORY CLEARANCES

1	Lease Deed/Lease docs	:	Lease deed : 27.03.2018 to 26.03.2028
2	CO	:	The CO, Pakur vide memo no. : 1131/Ra, dated 09.10.2024 has mentioned the plot no. of the project is not recorded as "Jungle Jhari" in R.S. Khatlyan & Register II.
3	DMO	:	DMO, Pakur vide memo no. 1475/M, dated 09.09.2024 certified that 06 other mining area (4.06 Acre, 6.60 Acre, 4.42 Acre, 5.44 Acre, 3.13 Acre & 4.95 Acre) exists within 500 m radius from proposed project site and total area is 32.694 Acre or 13.23 Ha.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. : 1236, dated 26.06.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	DFO, Pakur Forest Division vide letter no. : 1444, dated 26.12.2015 certified that the distance of notified forest is more than 500 meters from project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 1606/M, dated 25.09.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 94, Page no. 158).
7	Gram Sabha	:	Gram Sabha conducted on 02.01.2016.
8	Mine Plan Approval	:	i. Deputy Director Mines, Santhal Pargana Circle, Dumka vide memo no. 292/DDM, dated 20.07.2016.

		ii. Deputy Director Mines, Santhal Pargana Circle, Dumka vide memo no. 13/DDM, dated 08.01.2024.
9	Production Report	Production figure Issued by DMO, Pakur vide memo no. 148/M, dated 29.01.2024.
10	Compliance report of previous EC	Self certified compliance report of previous EC.
11	Previous Environmental Clearance (EC)	Previous EC granted by DEIAA, Pakur vide letter no.03/DEIAA, dated 02.01.2017.
12	Consent to Establish (CTE)	CTE Issued by JSPCB vide Ref. no. : JSPCB/HO/RNC/CTE-2444238 /2018/922, dated 30.08.2018.
13	Consent to Operate (CTO)	CTO issued by JSPCB vide Ref. no. : JSPCB/RO/DMK/CTO-19288607 /2024/161, dated 30.06.2024.
16	Qualified Person	Shri P.K. Senwas present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	: Opencast mechanized mining method
2	Quarry Area	: 1.66 ha or 4.094 Acres Life of Mine –4 Years
3	Waste Generation	: 1552 Cum
4	Stripping Ratio	: 1:00
5	Working Days	: 300
6	Bench: size & No	: 6m x 6m
7	Elevation of Mine	: 132 AMSL to 118 AMSL
8	Ground Level Elevation	: 118 AMSL
9	Ultimate Working Depth	: 100 AMSL (18 mbgl)
10	Water Table	: 71-75 AMSL (43-47 mbgl)
11	Topography of Mine	: Area represents highly metamorphosed and deformed Achaean terrain.
12	Explosive Requirement	: 90 kg/day
13	Diesel/Fuel requirement	: 120 litre/day

Production Details

Year	Production in EC (tons)	Production of Stone in Cum	Production of Stone in tons	Bench section
1 st	45082	16692	45068	136-130
2 nd	44955	16301	44013	118-112
3 rd	45090	16284	43967	130-124

4 th	45055	1680	4536	136-130
5 th	44923	--	--	
Total	225105	50957	137584	

As per approved mine plan production: - 16692 cum/annum or 45068 TPA

As per EC letter production: - 36700 cum/annum or 45090 TPA

Land Use

Pattern of Utilization	Present Land Use (in Ha)	At the End of this Plan period (in Ha)	Conceptual Period (in Ha)	
			Water Body	Plantation
Quarry	0.57	0.82	0.82	—
Safety Barrier	0.84 (Plantation)	0.84 (Plantation)	---	0.84
Road	0.02	Nil	..	
Total area in use	1.43	1.66	0.82	0.84
Balanced Area	0.23	Nil	---	---
Total Lease area	1.66	1.66	1.66	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.84 ha	2100 (Already done during previous year of mining)
2	Along Approach Road	:	1170 m	2340
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	4640

Note: A total of 9080 saplings were proposed to be planted. Out of which 2100 plant in Safety Zone area have been planted during previous year of mining.

(2340 plant along approach road & 4640 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 6980 Plants)

- ♦ Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development,

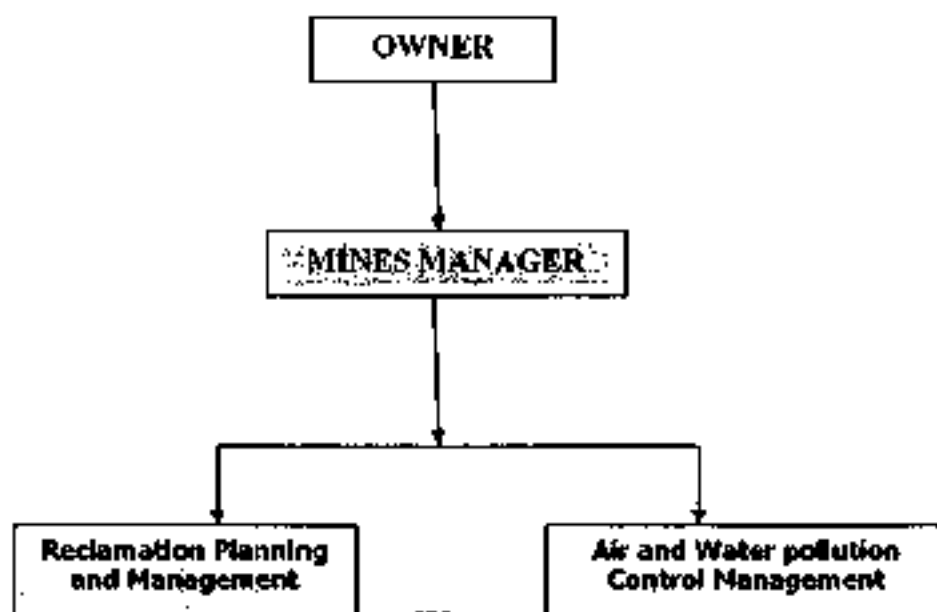
Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	50,000 40,000 20,000 10,000
3	Plantation	12,20,000	1,00,000
4	Construction and maintenance of haul road	3,00,000	1,50,000
TOTAL		15,20,000	5,70,000

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly



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Organization Structure

Solid Waste Management

Total 12374.50 cum of Waste will be generated during the plan period which shall be used in construction and maintenance of approach road.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NO_x emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
LS	Very Unlikely	Has not occurred/reported within last 5 years.

L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
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Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
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C5 (Insignificant)	25	20	15	10	5








Risk Rating Scale

S. No.	Rating	Scale
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Hazard identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
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3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily Injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in

loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
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during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

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- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidl etc. will be put in place.
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The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

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- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
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- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

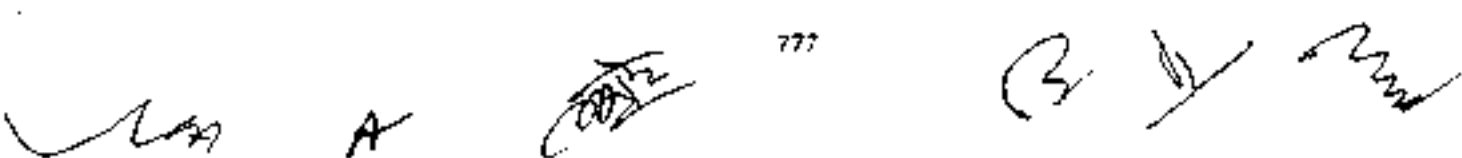
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- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.



- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 22, 23, 24, 25 & 26.10.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith following specific condition :-

- i. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).

27. Siulidanga Stone Deposit of Mr. Safikul Islam, Village : Siulidanga, Circle : Hiranpur, Distt. : Pakur, Jharkhand (2.638 Ha).

(Proposal No : SIA/JH/MIN/ 500752/2024)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 24.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Terms of Reference (ToR) as per EIA notification, 2006.

TOR Application for: Proposed Capacity- 55570.00 cum/annum or 150039.00 TPA.

Project and Location Details :

Sl	Parameter	Details
1	Project Name	: Siulidanga Stone Deposit
2	Lessee:	: Safikul Islam
3	Lease Address	: Village – Siulidanga, Circle – Hiranpur, District – Pakur, Jharkhand
4	Lease Area	: 2.638 Ha Acres- 6.52 Acres
5	Type of Land	: Non- Forest (Raiyati Land)
6	Project Cost	: Rs. 80 Lakhs
7	EMP Budget	: Capital: Rs. 10.325 lakhs Recurring: Rs. 7.70 Lakh / year
8	New or Expansion	: New
9	Mineable Reserves	: cum.: 552260.00 cum Tonnes: 1491102.00 tons
10	Mine Life	: 9.93 or say 10 years
11	Man power	: 20
12	Water Requirement	: 7.02~7.10 KLD (Drinking: 0.20 KLD, Dust Suppression: 3.49 KLD, Plantation: 3.33 KLD)
13	Water Source	: Water will be taken from nearby village
14	DG Set / power	: 500 KVA
15	Crusher	: No crusher
16	Nearest Water Body	: Toral Nadi, Approx. 2.76 km In SSW direction of mine site
17	Nearest Habitation	: Approx. 0.35 km
18	Nearest Rail Station	: Tilbhita Railway station, approx. 9.15 km in ESE direction.
19	Nearest Air Port	: Deoghar Airport, approx. 108.50 km towards WSW direction
20	Nearest Forest	: Protected Forest, Approx. 1.75 km In North west direction of mine site. Protected Forest, Approx. 4.10 km in NNE direction of mine site.
21	Road & Highways	: NH-133A, Approx. 1.75 km in SW direction

CO-ORDINATES

1	Latitude	From 24°41'33.7488"N	To 24°41'40.2980"N

2	Longitude	From 87°45'12.2672"E	To 87°45'19.6062"E

LAND DETAILS

Khata no.	Plot no.
03	79 (P), 81 & 82/305 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 1436/M, dated 05.09.2024.
2	CO	:	The CO, Hiranpur vide letter no. 295/Ra., dated 18.06.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatyan & Register II and also mentioned that the habitation of 15 houses at a distance of 350 meters of proposed project site.
3	DMO	:	DMO, Pakur vide memo no. 1499/M, dated 12.09.2024 certified that 03 other mining lease area (6.44 Acre, 4.25 Acre & 6.25 Acre) exists within 500 meters radius from proposed project site and total area is 23.46 Acre or 9.49 Ha.
4	DFO Wild Life	:	DFO -cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1461, dated 01.07.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide letter no. 829, dated 08.06.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 1647/M, dated 28.09.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 41, Page no. 119).
7	Gram Sabha	:	BDO, Hiranpur vide letter no. 600/Vi., dated 02.07.2024 informed that Gram Sabha conducted on 27.06.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 1622/M, dated 26.09.2024.
9	Qualified Person	:	Shri Sahadev Singh was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast mechanised method
2	Quarry Area	:	2.638 ha or 6.52 Acres Life of Mine – 9.93 or 10 Years
3	Waste Generation	:	Total 45570 cum
4	Stripping Ratio	:	01:0.1
5	Working Days	:	300
6	Bench: size & No	:	6m to 6m
7	Elevation of Mine	:	54 AMSL to 60 AMSL
8	Ground Level Elevation	:	54 AMSL
9	Ultimate Working Depth	:	Up to 22 AMSL
10	Water Table	:	Up to 18 AMSL (36m bgl)
11	Topography of Mine	:	The area represents small hillocks of Basalt.
12	Explosive Requirement	:	110 kg/day
13	Diesel/Fuel requirement	:	120 litre/day

Production Details

Year	Production of Stone		O/B waste in cum	Total waste in cum	Bench AMSL
	cum	tons			
1 st year	54960.00	148392.00	16800.00	16800.00	56-40
2 nd year	55520.00	149904.00	8720.00	8720.00	56-40
3 rd year	55560.00	150012.00	12150.00	12150.00	46-40
4 th year	55550.00	149985.00	7900.00	7900.00	40-34
5 th year	55570.00	150039.00	0.00	0.00	34-28
Total	277160.00	748332.00	45570.00	45570.00	

Land Use

Type of Land	Existing Land Use(Ha)	At The End Of Plan Period(Ha)	At Conceptual Period (Ha)
Excavation	Nil	1.326	2.156 (Entire area will be Converted In To Water Reservoir)
Waste Dump	Nil	0.300	Comes Under Mining
Road	Nil	0.013	Comes Under Mining
Crusher	Nil	Comes Under Mining	Comes Under Mining

Safety Zone	Nil	0.482 (Plantation)	0.482 (Plantation)
TOTAL	Nil	2.121	2.638
Unused Area	2.638	0.517	--
Total Area	2.638	2.638	2.638

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.482 ha	1205
2	Along Approach Road	:	180 m	360
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	4,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	50,000 40,000 20,000 10,000
3	Plantation	8,32,500	1,00,000
4	Construction and maintenance of haul road	2,00,000	1,50,000
TOTAL		10,32,500	7,70,000

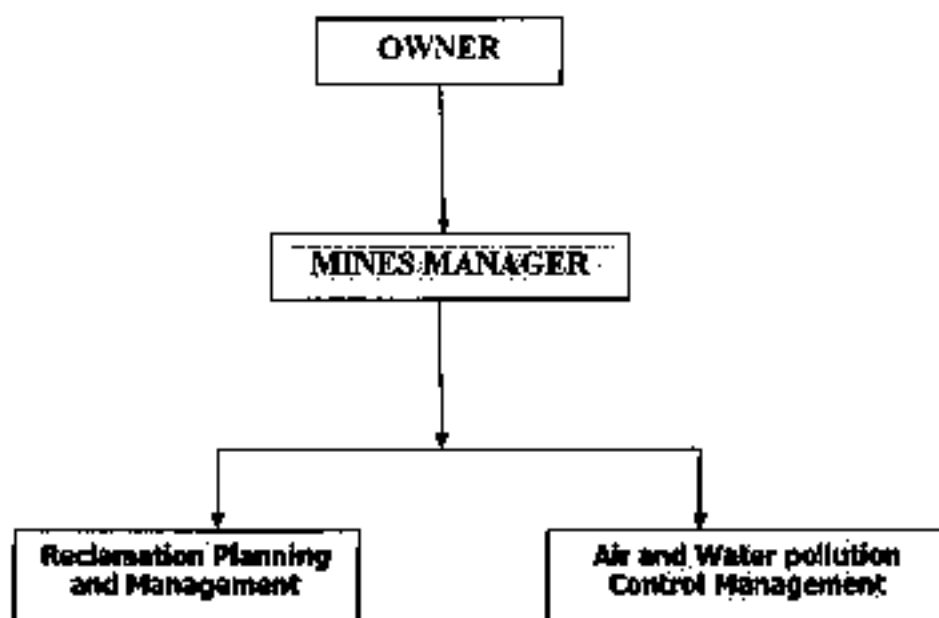
Note: *1665 plants * 500 Rs (for each plants including hedges and fences)= 8.325 lakhs

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

300*300 = 90,000/- or 1,50,000/- (including maintenance)

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly



Organization Structure

Solid Waste Management

Total 12374.50 cum of Waste will be generated during the plan period which shall be used in construction and maintenance of approach road.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.

- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate

		corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5

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3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	5
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily Injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

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during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

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- Time pressure
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The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.

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- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.

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- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 22, 23, 24, 25 & 26.10.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith following specific condition :-

- i. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Noam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- ii. The detailed EMP is to be prepared for the Habitation existing within an area of 500 meter radius of proposed project boundary. This EMP is to be included in EIA report

28. Bhimpur Stone Deposit of Partner : Shri Biswakarma Mardi & Shri Babudhan Murmu, Village : Bhimpur, Anchal : Maheshpur, Distt. : Pakur, Jharkhand (2.837 Ha).

(Proposal No : SIA/JH/MIN/ 502088/2024)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 24.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Terms of Reference (ToR) as per EIA notification, 2006.

TOR Application for: Proposed Capacity- 53969.50 cum/annum or 145717.65 TPA

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Bhimpur Stone Deposit
2	Lessee:	: Partner - Sri Biswakarma Mardi & Sri Babudhan Murmu
3	Lease Address	: Village – Bhimpur, Anchal – Maheshpur,

			District – Pakur, State – Jharkhand
4	Lease Area	:	2.837 Ha Acres- 7.01Acres
5	Type of Land	:	Non- Forest (Raiyati Land)
6	Project Cost	:	Rs. 120 Lakhs
7	EMP Budget	:	Capital: Rs. 16.225 lakhs Recurring: Rs. 7.70 Lakh/year
8	New or Expansion	:	New
9	Mineable Reserves	:	cum.: 537134.75 cum Tonnes: 1450263.83 tones
10	Mine Life	:	10 years
11	Man power	:	18
12	Water Requirement	:	12.96 ~ 13.0 KLD (Drinking: 0.18 KLD, Dust Suppression: 6.93 KLD, Plantation: 5.85 KLD)
13	Water Source	:	Water will be taken from nearby village
14	DG Set / power	:	500 KVA
15	Crusher	:	No crusher
16	Nearest Water Body	:	Bansloi River, Approx. 9.66 km. In South direction of mine site
17	Nearest Habitation	:	Bhimpur, Approx. 0.32 km in SSW direction.
18	Nearest Rail Station	:	Nagamabl Railway station, approx. 13.95 km in East direction.
19	Nearest Air Port	:	Deoghar Airport, approx. 103.78 km towards WSW direction
20	Nearest Forest	:	Protected Forest, Approx. 1.0 km in East direction of mine site. Protected Forest, Approx. 2.10 km in North direction of mine site. Protected Forest, Approx. 3.4 km in North direction of mine site.
21	Road & Highways	:	NH-133A, Approx. 8.50 km in North direction.

CO-ORDINATES

1	Latitude	From 24°34'43.4332" N	To 24°34'50.7133" N
2	Longitude	From 87°43'44.6037" E	To 87°43'52.8633" E

LAND DETAILS

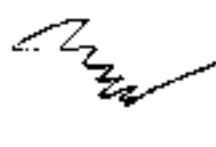
Khata no.	Plot no.
22	185 (P) & 186 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (Loi) has been issued by District Mining Officer, Pakur vide memo no. 1423/M, dated 05.09.2024.





2	CO	:	The CO, Maheshpur vide letter no. 1069/Ra., dated 17.10.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyah & Register II and also mentioned that the habitation of 24-25 houses at a distance of 320 meters of proposed project site.
3	DMO	:	DMO, Pakur vide memo no. 1758/M, dated 15.10.2024 certified that 04 other mining lease area (7.35 Acre, 3.71 Acre, 6.47 Acre & 5.71 Acre) exists within 500 meters radius from proposed project site and total area is 30.25 Acre or 12.24 Ha.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 2076, dated 18.10.2023 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide memo no. 1332, dated 07.10.2023 certified that the distance of forest is 728.04 meters from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 1759/M, dated 15.10.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 57, Page no. 130).
7	Gram Sabha	:	BDO, Maheshpur vide memo no. 1882/Vi., dated 12.09.2023 Informed that Gram Sabha conducted on 14.09.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 1822/M, dated 19.10.2024.
9	Qualified Person	:	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi - Mechanized Method	
2	Quarry Area	:	2.837 ha	Life of Mine – 10 Years
3	Waste Generation	:	36746.00 cum	
4	Stripping Ratio	:	1: 0.13	
5	Working Days	:	300	
6	Bench: size & No	:	6m to 6m	
7	Elevation of Mine	:	126 AMSL to 128 AMSL	
8	Ground Level Elevation	:	126 AMSL	
9	Ultimate Working Depth	:	Up to 86 AMSL (40 mbgl)	
10	Water Table	:	75-72 AMSL (51-54 mbgl)	

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11	Topography of Mine	:	The applied lease area represents a small hillock.
12	Explosive Requirement	:	110 kg/day
13	Diesel/Fuel requirement	:	140 litre/day

Production Details

Year	Production of Stone		Overburden in cum	Intercalated waste in Cum	Total waste in cum	Bench AMSL
	cum	tons				
1 st year	53337.75	144011.93	13490.00	2807.25	16297.25	122-116
2 nd year	53608.50	144742.95	0.00	2821.50	2821.50	110-98
3 rd year	53879.25	145473.98	3990.00	2835.75	6825.75	122-98
4 th year	53789.00	145230.30	5130.00	2831.00	7961.00	122-98
5 th year	53969.50	145717.65	0.00	2840.50	2840.50	98-86
Total	268584.00	725176.80	22610.00	14136.00	36746.00	

Land Use

Pattern Of Utilization	Existing Land Use (Ha)	At The End Of Plan Period (Ha)	At Conceptual Period (Ha)
Excavation	0.0	1.509	2.219 (0.275 ha area shall be Backfilled, 1.944 ha converted in to water reservoir)
Waste Dump	0.0	0.240	Nil (waste dump to be removed and backfilled)
Road	0.0	0.020	0.0
Infrastructure (Crusher)	0.0	0.0	0.0

Safety Zone Plantation	0.0	0.618 (Plantation)	0.618 (Plantation)
TOTAL	0.0	2.387	2.837
Unused Area	2.837	0.450	0.0
Total Area	2.837		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.618 ha	1545
2	Along Approach Road	:	640 m	1280
3	No. of plants distributed with consultation local authorities /village Panchayat	:	..	100

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	—	4,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	..	50,000 40,000 20,000 10,000
3	Plantation	14,62,500	1,00,000
4	Construction and maintenance of haul road	1,60,000	1,50,000
TOTAL		16,22,500	7,70,000

Note: *2925 plants * 500 Rs (for each plants including hedges and fences)= 14.625 lakhs

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

300*300 = 90,000/- or 1,50,000/- (including maintenance)

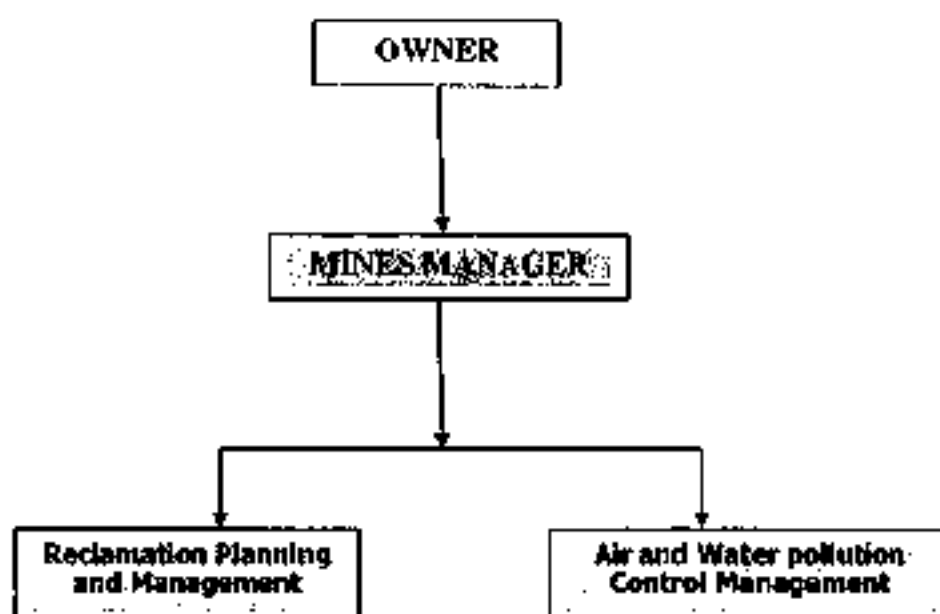
* 2.5 lakh per kilometer (250000 * 0.64 km haul road = Rs. 1,60,000/-)

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

Total 36746.00 cum of total waste will be generated during the plan period. In this applied lease area, the stone deposit is covered with 3m layer of intermixed soil which considered as over burden. The recovery of stone is about 95%, thus intercalated waste of only 5% shall be generate from this mine. It has been calculated that total 36746.00 cum in-situ 45932.50 cum loose & 39042.63 cum compact waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 19521.31 Cum (in situ) shall be utilized for approach & haul road maintenance. The rest waste material (50%) i.e. 19521.31 Cum waste shall be temporary dumped in northern part of the area.



Organization Structure

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.

L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

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S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°

- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation

- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how

risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers

- **Overtaking vehicles**

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
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- Only trained drivers will be hired.

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- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.

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- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
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Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 22, 23, 24, 25 & 26.10.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith following specific condition :-

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- II. The detailed EMP is to be prepared for the Habitation existing within an area of 500 meter radius of proposed project boundary. This EMP is to be included in EIA report.



29. Bastadih Stone Deposit of M/s Mahadev Stone Works (Partners : Shri Santosh Kumar Bhagat & Shri Shivdhar Madaiya), Village : Bastadih, Anchal : Hiranpur, Distt. : Pakur, Jharkhand (2.545 Ha).

(Proposal No : SIA/JH/MIN/ 502119/2024)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 24.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Terms of Reference (ToR) as per EIA notification, 2006.

TOR Application for: Proposed Capacity- 48488.00 cum/year or 130917.60 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Bastadih Stone Deposit
2	Lessee:	: M/s Mahadev Stone Works, (Partners – Sri Santosh Kumar Bhagat & Sri Shivdhar Madaiya)
3	Lease Address	: Village – Bastadih, Anchal – Hiranpur, District – Pakur, State – Jharkhand
4	Lease Area	: 2.545 Ha Acres- 6.29 Acres
5	Type of Land	: Non- Forest (Raiyati Land)
6	Project Cost	: Rs. 80 Lakhs
7	EMP Budget	: Capital: Rs. 17.175 lakhs Recurring: Rs. 5.70 Lakh / year
8	New or Expansion	: New
9	Mineable Reserves	: cum.: 471739.6 cum Tonnes: 1273696.92 tones
10	Mine Life	: 9.72 or 10 years
11	Man power	: 19
12	Water Requirement	: 13.80 KLD (Drinking: 0.19 KLD, Dust Suppression: 7.285 KLD, Plantation: 6.23 KLD)
13	Water Source	: Water will be taken from nearby village
14	DG Set / power	: 500 KVA
15	Crusher	: No crusher
16	Nearest Water Body	: Torai Nadi, approx. 6.90 km towards NW direction
17	Nearest Habitation	: Approx. 0.21 km towards East direction.
18	Nearest Rail Station	: Pakur Railway station, approx. 14.40 km towards ENE direction
19	Nearest Air Port	: Deoghar Airport, approx. 104.10 km towards WSW direction
20	Nearest Forest	: Protected Forest, Approx. 4.80 km. in NE direction of mine site. Protected Forest, Approx. 3.40 km. in NE direction of mine site. Protected Forest, Approx. 3.60 km. in SE direction of mine site. Protected Forest, Approx. 3.95 km. in SW direction of mine site. Protected Forest, Approx. 3.85 km. in WNW direction of mine site.
21	Road & Highways	: NH- 133A - Approx. 11.50 km in ENE direction.

CO-ORDINATES

1	Latitude	From 24°35'51.8656" N	To 24°35'59.2973" N
2	Longitude	From 87°42'59.7339" E	To 87°43'09.6933" E

LAND DETAILS

Khata No.	Plot No.
03	103(P)
12	104(P)
17	139
27	111
25	108, 109 & 110

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 1739/M, dated 15.10.2024.
2	CO	:	The CO, Hiranpur vide letter no. 473/Ra., dated 12.09.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatliyan & Register II and also mentioned that the habitation of 19 houses at a distance of 350 meters of proposed project site.
3	DMO	:	DMO, Pakur vide memo no. 1795/M, dated 18.10.2024 certified that 02 other mining lease area (5.20 Acre & 7.09 Acre) and 01 LOI (7.00 Acre) exists within 500 meters radius from proposed project site and total area is 25.58 Acre or 10.35 Ha.
4	DFO Wild Life	:	DFO -cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1211, dated 19.06.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide letter no. 805, dated 13.05.2022 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 1796/M, dated 18.10.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 116, Page no. 119).
7	Gram Sabha	:	BDO, Hiranpur vide letter no. 605/Vi., dated 30.08.2022 informed

		that Gram Sabha conducted on 29.07.2022.
8	Mine Plan Approval	Approved by District Mining Officer, Pakur vide Memo No. 1823/M, dated 19.10.2024.
9	Qualified Person	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast semi-Mechanized Method
2	Quarry Area	:	2.545 ha or 6.29 acres Life of Mine - 9.72 or 10 Years
3	Waste Generation	:	43834.40 Cum
4	Stripping Ratio	:	01:0.1
5	Working Days	:	300
6	Bench: size & No	:	6m * 6m
7	Elevation of Mine	:	118 AMSL to 120 AMSL
8	Ground Level Elevation	:	118 AMSL
9	Ultimate Working Depth	:	up to 80 AMSL (38 mbgl)
10	Water Table	:	65-62 AMSL (53-56 mbgl)
11	Topography of Mine	:	The area represents a small hillock.
12	Explosive Requirement	:	110 kg/day
13	Diesel/Fuel requirement	:	140 litre/day

Production Details

Year	Production of Stone in cum	Production of Stone in tons	Overburden in cum	Intercalated Waste in (cum)	Total Waste in (cum)	Bench AMSL
1st	46306.80	125028.36	15768.00	2437.20	18205.20	116-110
2nd	46580.40	125767.08	2952.00	2451.60	5403.60	110-104
3rd	46785.60	126321.12	0.00	2462.40	2462.40	104-98
4th	47332.80	127798.56	5040.00	2491.20	7531.20	116-92
5th	48488.00	130917.60	7680.00	2552.00	10232.00	110-98
Total	235493.60	635832.72	31440.00	12394.40	43834.40	

Land Use

Type of Land	Present Land Use (In Ha)	At the End of the Plan Period (In Ha)	At the End of Mine (In Ha.)

Excavation	--	1.307	1.844 (0.106 ha area shall be Backfilled, 1.738 ha converted in to water reservoir)
Waste Dump	--	0.465	Nil (waste dump to be removed and backfilled)
Road	--	0.025	--
Safety Zone	--	0.701 (Plantation)	0.701 (Plantation)
Total	0.0	2.498	2.545
Balance	2.545	0.047	0.00
Lease Hold Area	2.545	2.545	2.545

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Safety Zone	0.701 ha	1755
2	Along Approach Road	630 m	1260
3	No. of plants distributed with consultation local authorities /village Panchayat	--	100

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs)	Recurring Cost (Rs)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	50,000 40,000 20,000 10,000
3	Plantation	15,57,500	1,00,000

4	Construction and maintenance of haul road	1,60,000	1,50,000
TOTAL		17,17,500	5,70,000

*Note: *3115 plants * 500 Rs (for each plants including hedges and fences)= 15.575 lakh*

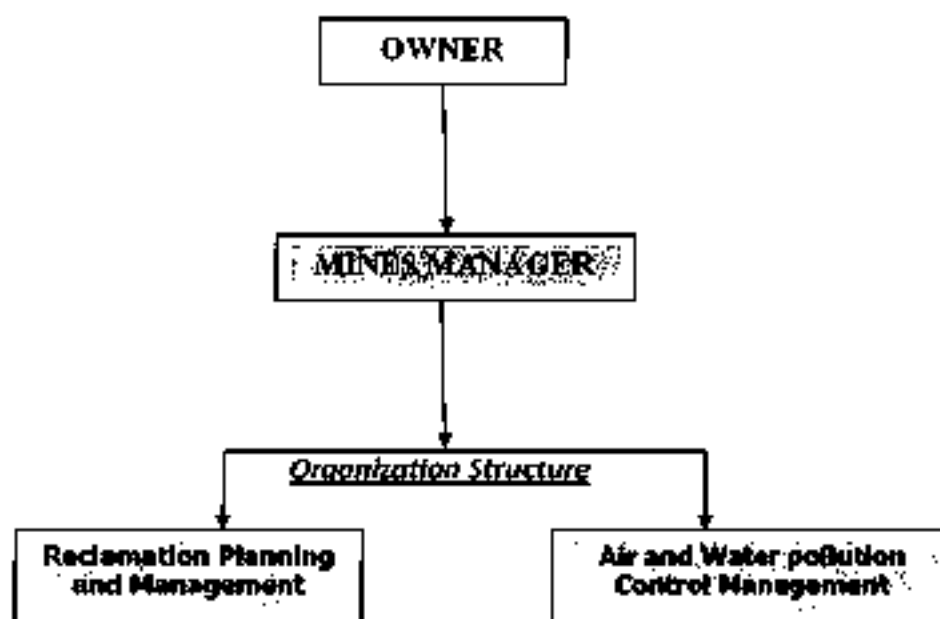
*Salary of Labor for haul road maintenance 1 labor*300 =300 per day*

300 300 = 90,000/- or 1,50,000/- (including maintenance)*

** 2.5 lakh per kilometer (250000 * 0.63 km haul road = 1,57,500 or 1,60,000/-)*

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly



Solid Waste Management

Total 43834.40 cum (31440.00 cum of Overburden & 12394.40 cum of Intercalated waste) waste will be generated during the plan period. It has been calculated that total 43834.40 cum in-situ 54793.00 cum loose & 46574.05 cum compact waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 21917.20 cum (In situ) shall be utilized for approach & haul road maintenance. The rest waste material (50%) i.e. 21917.20 cum waste shall be temporary dumped in eastern part of the area and it will cover 0.465ha. area.

Water Quality Management

- Mining is planned to above the ground water table. In case any Intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected In garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method.

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.

L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12

3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily Injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)

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- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the

drill hole continuously and discharges the same in a dust collector specially provided for the purpose.

- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how

risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)

- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

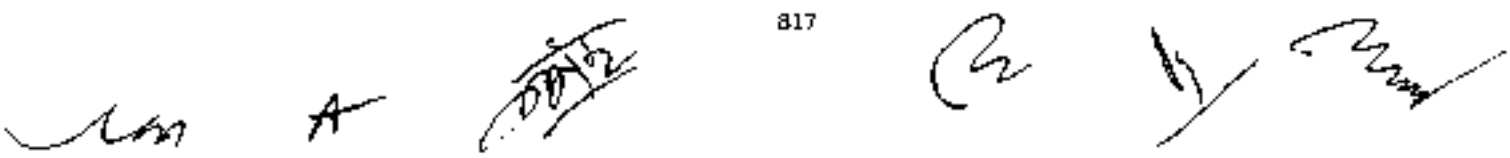
- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.

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- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the Information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 22, 23, 24, 25 & 26.10.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith following specific condition :-

- i. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).
- ii. The detailed EMP is to be prepared for the Habitation existing within an area of 500 meter radius of proposed project boundary. This EMP is to be included in EIA report.



30. Tongi Stone Deposit of M/s Tongi Stone Works (Prop. : Md. Motiur Rahman), Village : Tongi, Anchal : Hiranpur, Distt. : Pakur, Jharkhand (2.027 Ha).

(Proposal No : SIA/JH/MIN/ 502124/2024)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 24.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Terms of Reference (ToR) as per EIA notification, 2006.

TOR Application for: Proposed Capacity- 38900 cum/annum or 105029 TPA.

Project and Location Details :

S/	Parameter	Details
1	Project Name	: Tongi Stone Deposit
2	Lessee:	: M/S Tongi Stone Works, (Proprietor – Md. Motiur Rahman, S/O- Ekramul Haq)
3	Lease Address	: Village – Tongi, Anchal – Hiranpur, District – Pakur, Jharkhand
4	Lease Area	: 2.027 Ha Acres- 5.01 Acres
5	Type of Land	: Non- Forest (Raiyati Land)
6	Project Cost	: Rs. 80 Lakhs
7	EMP Budget	: Capital: Rs. 8.50 lakhs Recurring: Rs. 7.70 Lakh / year
8	New or Expansion	: New
9	Mineable Reserves	: cum.: 385312.22 cum Tonnes: 1040343 tones
10	Mine Life	: 9.9 or 10 years
11	Man power	: 18
12	Water Requirement	: 6.18~6.20 KLD (Drinking: 0.18 KLD, Dust Suppression: 3.0 KLD, Plantation: 3.0 KLD)
13	Water Source	: Water will be taken from nearby village
14	DG Set / power	: 500 KVA
15	Crusher	: No crusher
16	Nearest Water Body	: Toral Nadi, Approx. 3.85 km. in SW direction of mine site.
17	Nearest Habitation	: Approx. 0.41 km
18	Nearest Rail Station	: Kotalapukur Railway station, approx. 8.92 km towards ENE direction.
19	Nearest Air Port	: Deoghar Airport, approx. 109.28 km towards WSW direction
20	Nearest Forest	: Protected Forest, Approx. 1.80 km. in NE direction of mine site. Protected Forest, Approx. 1.20 km. in SW direction of mine site. Protected Forest, Approx. 1.60 km. in SE direction of mine site.
21	Road & Highways	: NH- 133A - Approx. 1.88 km in SW direction.

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CO-ORDINATES

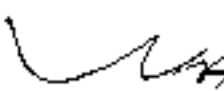
1	Latitude	From 24°42'35.2990"	To 24°42'43.4017"N
2	Longitude	From 87°44'25.7053"	To 87°44'30.9486"E

LAND DETAILS

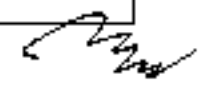
Khata No.	Plot No.
04	131
07	132
09	134(P), 138(P)
10	133(P)
12	136
13	135,137(P),139
16	129(P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 1740/M, dated 15.10.2024.
2	CO	:	The CO, Hiranpur vide letter no. 47/Ra., dated 31.01.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II and also mentioned that the habitation of 05 houses at a distance of 410 meters of proposed project site.
3	DMO	:	DMO, Pakur vide memo no. 1797/M, dated 18.10.2024 certified that 03 other mining lease area (10.36 Acre, 11.77 Acre & 5.83 Acre) exists within 500 meters radius from proposed project site and total area is 32.97 Acre or 13.34 Ha.
4	DFO Wild Life	:	DFO -cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 368, dated 22.02.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide letter no. 160, dated 30.01.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 1798/M, dated





		18.10.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 36, Page no. 118).
7	Gram Sabha	800, Hiranpur vide letter no. 247/Vi., dated 29.02.2024 informed that Gram Sabha conducted on 28.02.2024.
8	Mine Plan Approval	Approved by District Mining Officer, Pakur vide Memo No. 1818/M, dated 19.10.2024.
9	Qualified Person	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	: Opencast Semi Mechanized Method
2	Quarry Area	: 2.027 ha Life of Mine ~ 9.9 or 10 Years
3	Waste Generation	: 27024 cum
4	Stripping Ratio	: 1: 0.13
5	Working Days	: 300
6	Bench: size & No	: 6m to 6m
7	Elevation of Mine	: 64 AMSL to 72 AMSL
8	Ground Level Elevation	: 64 AMSL
9	Ultimate Working Depth	: Up to 34 AMSL (30 mgl)
10	Water Table	: 20-17 AMSL (47-44 mbgl)
11	Topography of Mine	: The area represents a small hillock.
12	Explosive Requirement	: 110 kg/day
13	Diesel/Fuel requirement	: 140 litre/day

Production Details

Year	Production of Stone in cum	Production of Stone in tons	Overburden in cum	Intercalated Waste in (cum)	Total Waste in (cum)	Bench AMSL
1st	38368	103593	6775	2019	8794	64-58
2nd	38891	105006	5825	2047	7872	58-52
3rd	38900	105029	4223	2047	6270	58-52
4th	38846	104883	0	2045	2045	52-46
5th	38817	104806	0	2043	2043	46-40
Total	193821	523316	16823	10201	27024	

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of Plan Period (Ha)	After life of mine (Ha)
Excavation	--	0.967	1.547 (0.155 ha area shall be Backfilled, 1.392 ha converted in to water reservoir)
Waste Dump	--	0.240	Nil (waste dump to be removed and backfilled)
Road	--	0.050	--
Infrastructure (Crusher)	--	--	--
Safety Zone	--	0.480 (Plantation)	0.480 (Plantation)
Total	0.0	1.737	2.027
Unused Area	2.027	0.290	0.00
Total Lease Area	2.027		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Safety Zone	: 0.480 ha	1200
2	Along Approach Road	: 100 m	200
3	No. of plants distributed with consultation local authorities /village Panchayat	: --	100

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs)	Recurring Cost (Rs)
1	Pollution Control & Dust Suppression	--	4,00,000

2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise		50,000 40,000 20,000 10,000
3	Plantation	7,50,000	1,00,000
4	Construction and maintenance of haul road	1,00,000	1,50,000
TOTAL		8,50,000	7,70,000

Note: *1500 plants * 500 Rs (for each plants including hedges and fences)= 7.50 lakh

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

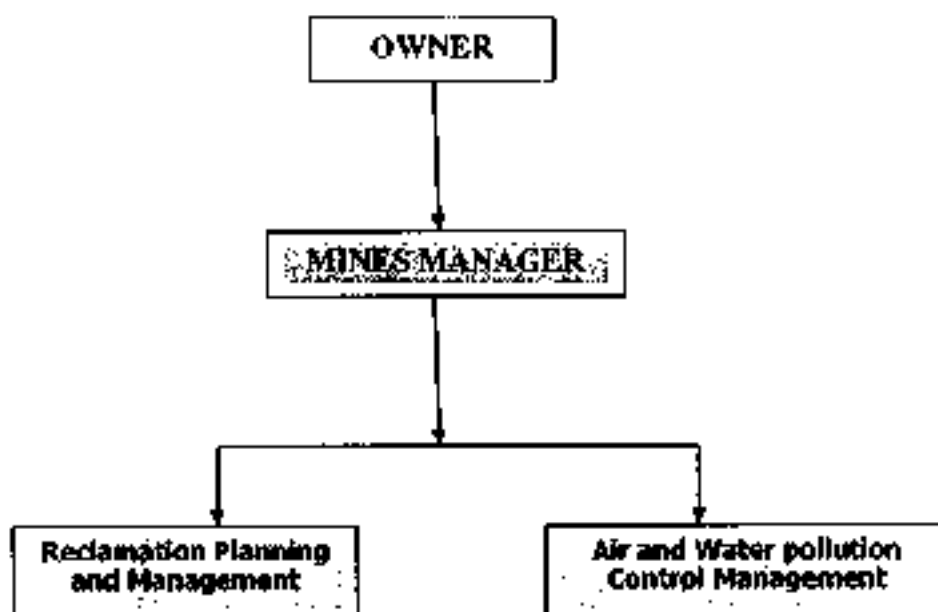
300* 300 = 90,000/- or 1,50,000/- (including maintenance)

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

Total 27024 cum In-situ 33780.13 cum loose & 28713.11 cum compact waste shall be generated during this plan period. The 50% of waste generated during the plan period i.e. 14357 cum (Insitu) shall be utilized for approach & haul road maintenance. The rest waste material (50%) i.e. 14357 cum waste shall be temporary dumped in southern part of the area and it will cover 0.240ha area.



Organization Structure

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.

L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard Identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°

- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation

- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how

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risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)

- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.

- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 22, 23, 24, 25 & 26.10.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith following specific condition :-

- i. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).
- ii. The detailed EMP is to be prepared for the Habitation existing within an area of 500 meter radius of proposed project boundary. This EMP is to be included in EIA report.



**31. Khaprajola Stone Deposit of M/s Gurukripa Stone Works (Partner : Shri Mohit Mandhyan),
Mouza : Khaprajola, Thana : Pakur, Distt. : Pakur, Jharkhand (2.79 Ha).**

{Proposal No : SIA/JH/MIN/ S02106/2024}

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 24.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Terms of Reference (ToR) as per EIA notification, 2006.

TOR Application for: Proposed Capacity- 85244.00 cum/annum or 255731.00 TPA

Project and Location Details :

Sl	Parameter	Details
1	Project Name	: Khaprajola Stone Deposit
2	Lessee:	: M/s Gurukripa Stone Works Partner – Sri Mohit Mandhyan 2) Sri Hiralal Mandhyan S/o Late Bhambha Mal, Address- 38/1C, S.N. Roy Road, Sahapur, Kolkata, West Bengal - 700038 3) Sri Chitesh Mandhyan S/o-Late Gopichand Mandhyan, Address- Sindhiparn, Distt Pakur, Jharkhand
3	Lease Address	: Mauja – Khaprajola, Thana-Pakur, District – Pakur, Jharkhand
4	Lease Area	: 2.79 Ha Acres- 6.8975 Acres
5	Type of Land	: Non- Forest (Raiyati Land)
6	Project Cost	: Rs. 120 Lakhs
7	EMP Budget	: Capital: Rs. 19.15 lakhs Recurring: Rs. 5.70 Lakh / year
8	New or Expansion	: New
9	Mineable Reserves	: cum.: 426260 cum Tonnes: 1278781 tones
10	Mine Life	: 5 years
11	Man power	: 31
12	Water Requirement	: 15.41 ~ 16.00 KLD (Drinking: 0.31 KLD, Dust Suppression: 8.0 KLD, Plantation: 7.10 KLD)
13	Water Source	: Water will be taken from nearby village
14	DG Set / power	: 500 KVA
15	Crusher	: No crusher
16	Nearest Water Body	: Feeder Canal, approx. 9.33 km. in ENE direction of mine site.
17	Nearest Habitation	: Salboni approx. 0.53 km in SSE direction.
18	Nearest Rail Station	: Nagarnabi Railway station, approx. 2.50 km in East direction.
19	Nearest Air Port	: Deoghar Airport, approx. 117.50 km towards West direction.
20	Nearest Forest	: Protected Forest, approx. 4.00 Km in SW direction of mine site.
21	Road & Highways	: NH-133A, Approx. 4.20 km in North direction.

CO-ORDINATES

1	Latitude	From 24°35'52.282" N	To 24°36'36.0366"N
2	Longitude	From 87°50'44.766" E	To 87°50'52.320" E

LAND DETAILS

Khata No.	Plot No.
24	679 (P), 680 (P)& 681 (P)
10	682 & 683
20	691 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 1659/M, dated 28.09.2024.
2	CO	:	The CO, Pakur vide letter no. 835/Ra., dated 31.07.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatyan & Register II.
3	DMO	:	DMO, Pakur vide memo no. 1705/M, dated 09.10.2024 certified that 02 LOI (4.71 Acre & 2.86 Acre) and 01 other mining lease area (6.98 Acre) exists within 500 meters radius from proposed project site and total area is 21.4475 Acre or 8.68 Ha.
4	DFO Wild Life	:	DFO -cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 816, dated 27.04.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide letter no. 683, dated 04.05.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 1704/M, dated 09.10.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 69, Page no. 149).
7	Gram Sabha	:	BDO, Pakur vide letter no. 1598, dated 16.07.2024 informed that Gram Sabha conducted on 12.07 2024.
8	Mine Plan	:	Approved by District Mining Officer, Pakur vide Memo No.

	Approval		1777/M, dated 17.10.2024.
9	Qualified Person	:	Shri P.K. Sen was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized method	
2	Quarry Area	:	2.79 ha	Life of Mine – 5 Years
3	Waste Generation	:	26380 cum of Gritty Soil and 22432 cum of Intercalated Waste.	
4	Stripping Ratio	:	1: 0.19	
5	Working Days	:	300	
6	Benchies: size & No	:	6m to 6m	
7	Elevation of Mine	:	46 AMSL to 55 AMSL	
8	Ground Level Elevation	:	46 AMSL	
9	Ultimate Working Depth	:	Up to 10 AMSL (36 mgbf)	
10	Water Table	:	Up to 06 AMSL (40 mgbf)	
11	Topography of Mine	:	The area represents a moderately sloping land with rock mass of Basalt.	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	150 litre/day	

Production Details

Year	Removal of Gritty Soil		Intercalated Waste	Production of Stone		Bench AMSL
	In cum	In tons	In cum	In cum	In tons	
1st	7030	10545	4487	85240	255717	53-28
2nd	12150	18225	4486	85224	255674	53 – 22
3rd	5040	7560	4487	85244	255731	52 – 28
4th	2160	3240	4487	85244	255731	53 – 28
5th	0	0	4485	85215	255645	28 – 10
Total	26380	39570	22432	426167	1278498	

Land Use

Pattern of Utilization	Present Land Use (Ha)	At the end of Plan period (Ha)	Conceptual Period (In Ha)		
			Public Use	Water Body	Plantation
Quarry	Nil	2.17 ha. (0.39 Ha area shall be backfilled and after backfilling entire area will be converted into water reservoir.)	---	2.17	---
Greenbelt within Safety Barrier	Nil	0.62 (Plantation)	---	---	0.62
Road	0.02	Nil	---	---	---
Total Area in Use	0.02	2.79	---	2.17	0.62
Balanced Area unused	2.77	Nil	---	---	---
Total Applied Area	2.79	2.79	2.79		

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.62 ha	1550
2	Along Approach Road	:	950 m	1900
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

- Gablon Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000

2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	50,000 40,000 20,000 10,000
3	Plantation	16,75,000	1,00,000
4	Construction and maintenance of haul road	2,40,000	1,50,000
TOTAL		19,15,000	5,70,000

Note: *3350 plants * 500 Rs (for each plants including hedges and fences) = 16.75 Lakh

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

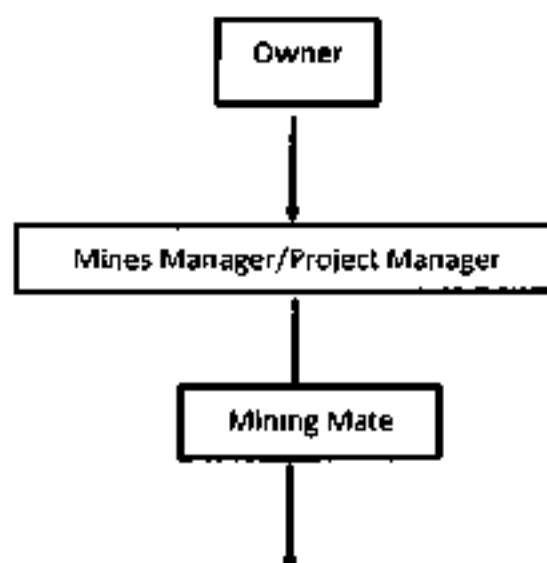
300* 300 = 90000/- or 1,50,000/- (including maintenance)

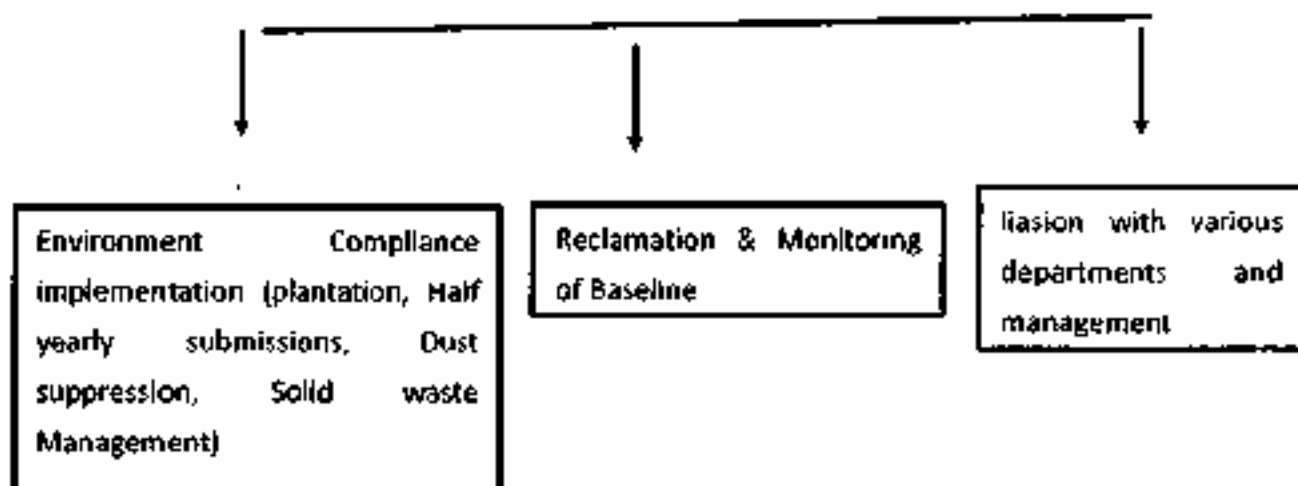
* 2.5 lakh per kilometer (250000 * 0.95 km haul road = 2,37,500 or 2,40, 000/)

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Environment management cell





FUNCTIONS OF ENVIRONMENT MONITORING CELL

- Supervision: Managed by Mines Manager with a qualified technical team.
- Personnel: Includes skilled, semi-skilled, unskilled, and other third parties.
- Responsibilities:
 - ✓ Implement environmental control measures.
 - ✓ Oversee reclamation planning and management.
 - ✓ Manage air and water pollution control.
 - ✓ Liaise with state and central statutory agencies.
 - ✓ Develop greenbelt areas.
- Performance Review: Assess corporate environmental performance and report non-compliances.
- Remedial Actions: Suggest and implement actions for exceeding pollution limits.
- Coordination:

Collect health statistics for workers and local population.

Act as a bridge for project implementation and Project Authorities

Facilitate afforestation efforts.

Solid Waste Management

Total 26380 cum of Gritty Soil and 22432 cum intercalated waste shall be generated during the plan period. The area is covered with a layer of gritty soil. During quarry development in 1st & 2nd year gritty soil and intercalated waste will be removed and this gritty soil & waste will be temporarily dumped [area -0.28 Ha, (L x W x H = 64m x 51m x 4m) & 2nd year area 0.21(L x W x H = 57m x 43m x 4m & 4m) at the south part of the area with suitable precautions like parapet wall, garland drain & in 3rd year gritty soil, intercalated waste & existing temporarily dumped materials will be Backfill within the quarry & 4th and 5th year removal material backfill within the exhausted quarry.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.

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- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.

L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4

2	Medium Risk	5-12
3	Low Risk	13-25

Hazard Identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed

- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the

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drill hole continuously and discharges the same in a dust collector specially provided for the purpose.

- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted

by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)

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- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.

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- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 22, 23, 24, 25 & 26.10.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith following specific condition :-

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).
- II. The detailed EMP is to be prepared for the Habitation existing within an area of 500 meter radius of proposed project boundary. This EMP is to be included in EIA report.

32. Teram Stone Mine of Shri Nitesh Sarda, Village : Teram, Thana : Khunti, Distt. : Khunti, Jharkhand (1.523 Ha).

(Proposal No : SIA/JH/MIN/ 502300/2024)

Name of the consultant : P & M Solution, Noida, U.P.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

This is re-appraisal of the EC issued by DEIAA, Khunti which has been taken up for consideration on 24.10.2024. As per O.M. dated 12.12.2018 issued by MOEF & CC projects fall in category B2.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

The project has been granted EC by DEIAA, Khunti vide letter no. EC/DEIAA/ 2017-18/51, dated 21.08.2017.

Existing baseline condition as per monitoring report submitted by PP is as follows PM₁₀ - 82.0µg/m³ PM_{2.5} - 44.0 µg/m³ SO₂ - 12.10 NO₂ - 27.09µg/m³ . All the data are within the permissible limit.

Data generated by JSPCB empaneled Laboratory has been also submitted by PP. All the data are within prescribed limit.

Dust suppression is being carried out on regular basis.

As per certified compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per letter no. 661/M, dated 31.07.2024 by DMO, Khunti is within the permissible limit of EC.

EC Application for: Proposed Capacity- 44450 cum/annum and 120015 TPA

Project and Location Details:

Sl	Parameter		Details
1	Project Name	:	Teram Stone Mine
2	Lessee:	:	Sri Nitesh Sarda
3	Lease Address	:	Village – Teram, Thana- Khunti, District – Khunti, Jharkhand.
4	Lease Area	:	1.523 ha. Acres- 3.76 Acres
5	Type of Land	:	Non-Forest (G. M. Land)
6	Project Cost	:	Rs. 1.40 cr.
7	EMP Budget	:	Capital: Rs. 3.60 Lakhs Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New
9	Mineable Reserves	:	655857 tons (As per DEIAA EC)
10	Mine Life	:	5 years
11	Man power	:	24

12	Water Requirement	:	3.69 ~ 4.00 KLD (Drinking: 0.24 KLD, Dust Suppression: 2.81 KLD, Plantation: 0.64 KLD)
13	Water Source	:	Water will be taken from nearby village
14	DG Set / power	:	200 KVA
15	Crusher	:	No Crusher
16	Nearest Water Body	:	Kanchi River, Approx. 2.32 Km in NE direction from Mine site.
17	Nearest Habitation	:	Approx. 270 m in NE direction
18	Nearest Railway Station	:	Balasiring Railway station, approx. 14.66 km towards NNW direction.
19	Nearest Air Port	:	Birsa Munda Airport Ranchi, approx. 19.50 km towards North direction.
20	Nearest Forest	:	Open jungle mainly sal, Approx. 2.50 Km in North direction from Mine site. Open jungle mainly sal, Approx. 2.50 Km in East direction from Mine site. Open jungle mainly sal, Approx. 3.50 Km in SW direction from Mine site
21	Road & Highways	:	NH 20, Approx. 5.80 km in West direction.

CO-ORDINATES

1	Latitude	:	From 23°08' 30.4" N	To 23°08' 28.4" N
2	Longitude	:	From 85°19' 37.1" E	To 85°19' 35.1" E

LAND DETAILS

Khata no.	Plot no.
36	63

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease Deed :07.09.2017 to 06.09.2027.
2	CO	:	The CO, Sadar, Khunti vide letter no. 490/Ra, dated 19.06.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyar.
3	DMO	:	DMO, Khunti vide memo no. 660/M, dated 31.07.2024 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Ranchi vide letter no. 547, dated 09.06.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.

5	DFO Territorial	:	Division Forest Officer, Khunti Forest Division vide letter no. 1528, dated 16.11.2016 certified that the distance of forest is 600 meter from proposed project site.
6	DSR	:	This project is mentioned in approved District Survey Report (DSR) of Khunti District (Sl. no. 10, Page no. 32).
7	Gram Sabha	:	Gram Sabha conducted on 28.10.2016.
8	Mine Plan Approval	:	Approved by AMO, Khunti vide Memo No. 713/M, dated 27.12.2016.
9	Qualified Person	:	Shri J.P. Bhattacharyahas confirmed through email 24.10.2024 that the mine plan has been prepared by him.
10	Production Report	:	Production figure issued by DMO, Khunti vide letter no. 661/M, dated 31.07.2024.
11	Compliance report of previous EC	:	Compliance report certified by Regional Office, JSPCB Durgam vide letter no. 890, dated 26.07.2024.
12	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Khunti vide letter no. EC/DEIAA/2017-18/51, dated 21.08.2017.
13	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. : JSPCB/HO/RNC/CTE-1874696/2018/46, dated 09.01.2018.
14	Consent to Operate (CTO)	:	CTO issued by JSPCB vide Ref. no. : JSPCB/RO/RNC/CTO-12467266/2022/55, dated 24.02.2022.

Working Details

1	Mining Method	:	Opencast mechanized mining method
2	Quarry Area	:	1.523 ha. or 3.76 Acres
		:	Life of Mine – 5 Years
3	Waste Generation	:	14380 m ³
4	Stripping Ratio	:	1.00.1
5	Working Days	:	300
6	Bench: size & No	:	6m x 6m
7	Elevation of Mine	:	550 AMSL to 558 AMSL
8	Ground Level Elevation	:	550 AMSL
9	Ultimate Working Depth	:	516 AMSL (34 mbgl)
10	Water Table	:	502-500 AMSL (48- 50 mbgl)
11	Topography of Mine	:	Area represents slight inclination.
12	Explosive Requirement	:	90 kg/day

13	Diesel/Fuel requirement	:	120 litre/day

Production Details (As per DEIAA EC)

Year	Production in EC (tons)	Production of Stone In Cum
1st	30105	11150
2nd	30092	11145
3rd	37571	13915
4th	120002	44445
5th	120015	44450
Total	337785	125105

As per EC letter production: - 44450 cum/annum and 120015 TPA

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of End of Mining Scheme Period (Ha)	At Conceptual period (Ha)
Quarry	0.173	0.800	0.980 (Entire area will be converted into water reservoir)
Safety Zone	0.430 (Plantation)	0.430 (Plantation)	0.430 (Plantation)
Dump (Temporary)	0.140	-	-
Road	-	0.060	0.060
Total area in use	0.743	1.290	1.470
Balance Area	0.780	0.233	0.053
Lease Area	1.523	1.523	1.523

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Safety Zone	0.430 ha	1075 (Already done during previous year of mining)
2	Along Approach Road	110 m	220
3	No. of plants distributed with consultation local authorities /village Panchayat	--	1495

Note: A total of 2790 saplings were proposed to be planted. Out of which 1075 plant in Safety Zone area have been planted during previous year of mining.

{220 plant along approach road & 1495 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 1715 Plants)

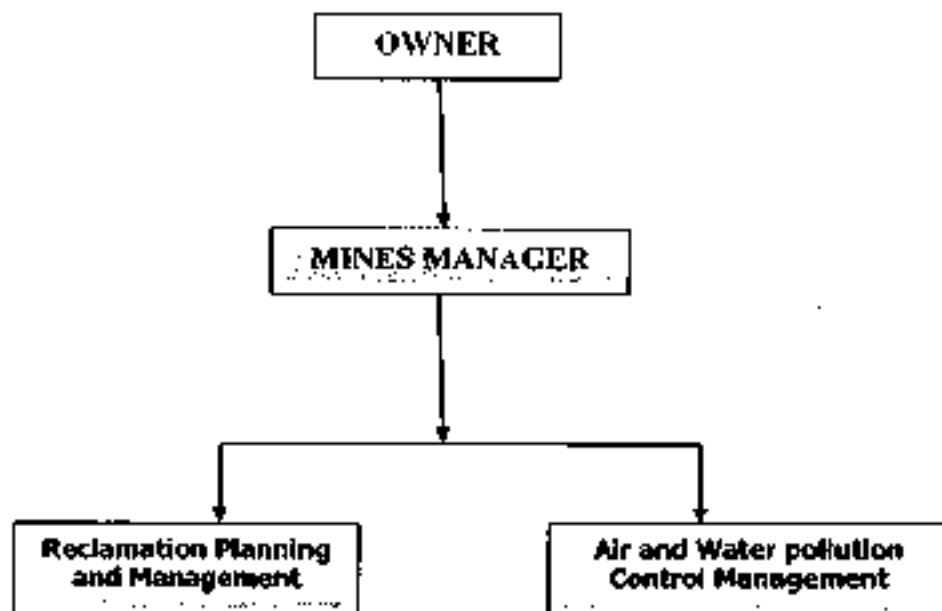
- Gablon Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	14,000 8,000 8,000 7,000
3	Plantation	1,60,000	1,00,000
4	Construction and maintenance of haul road	2,00,000	1,50,000
TOTAL		3,60,000	4,87,000

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly



Organization Structure

Solid Waste Management

It was estimated that around 14380m³ of overburden materials will have to be removed during the mining plan period. The overburden zone with an average thickness of 2m and mostly comprising of alluvial cum lateritic soil has been removed from almost entire part of the mining leasehold area planned for stone extraction during mining plan period and thereafter.

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- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
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C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard Identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5

5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container

- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.

- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gablon plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Teram Stone Mine of Shri Nitesh Sarda, Village : Teram, Thana : Khunti, Distt. : Khunti, Jharkhand (1.523 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- I. During appraisal of the project it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC.
- II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- III. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to be submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

33. Ghyarappa Stone Mine of Shri Nitesh Sarda, Mouza : Ghyarappa, Thana : Khunti, Distt. : Khunti, Jharkhand (1.45 Ha).

(Proposal No : SIA/IH/MIN/ 502318/2024)

Name of the consultant :P & M Solution, Noida, U.P.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

This is re-appraisal of the EC issued by DEIAA, Khunti which has been taken up for consideration on 24.10.2024. As per O.M. dated 12.12.2018 issued by MOEF & CC projects fall in category B2.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

The project has been granted EC by DEIAA, Khunti vide letter no. EC/DEIAA/ 2017-18/49, dated 21.08.2017.

Existing baseline condition as per monitoring report submitted by PP is as follows PM₁₀ - 82.0 $\mu\text{g}/\text{m}^3$ PM_{2.5} - 44.0 $\mu\text{g}/\text{m}^3$ SO₂ - 12.10 NO₂ - 27.09 $\mu\text{g}/\text{m}^3$ - All the data are within the permissible limit.

Data generated by JSPCB empaneled Laboratory has been also submitted by PP. All the data are within prescribed limit.

Dust suppression is being carried out on regular basis.

As per certified compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per letter no. 663/M, dated 31.07.2024 by DMO, Khunti is within the permissible limit of EC.

EC Application for: Proposed Capacity- 38900 cum/annum or 105030 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Giyarappa Stone Mine
2	Lessee:	Sri Nitesh Sarda
3	Lease Address	Mouza - Giyarappa, Thana - Khunti, District - Khunti, State- Jharkhand.
4	Lease Area	1.45 ha. Acres- 3.58 Acres
5	Type of Land	Non-Forest (G. M. Land)
6	Project Cost	Rs. 1.20 cr.
7	EMP Budget	Capital: Rs. 4.30 Lakhs Recurring: 4.87 Lakhs / year
8	New or Expansion	New
9	Mineable Reserves	472853 tons (As per DEIAA EC)
10	Mine Life	5 years

11	Man power	:	22
12	Water Requirement	:	4.62 ~ 5.0 KLD (Drinking: 0.22 KLD, Dust Suppression: 3.48 KLD, Plantation: 0.92 KLD)
13	Water Source	:	Water will be taken from nearby village
14	DG Set / power	:	200 KVA
15	Crusher	:	No Crusher
16	Nearest Water Body	:	Kanchi River, Approx. 2.6 km towards NNE direction of mine site..
17	Nearest Habitation	:	Approx. 620 m in SE direction
18	Nearest Railway Station	:	Lodhna Railway station, approx. 9.42 km towards NE direction.
19	Nearest Air Port	:	Birsa Munda Airport, Ranchi approx. 17.37 km towards NNE direction.
20	Nearest Forest	:	Open Jungle Mainly Sal, Approx. 1.3 km towards North direction of mine site. Open Sal, Approx. 1.0 km towards West direction of mine site.
21	Road & Highways	:	NH 20, Approx. 0.73 km. In SE direction.

CO-ORDINATES

1	Latitude	:	From 23°09'40.2" N	To 23°09'40.7" N
2	Longitude	:	From 85°15'50.6" E	To 85°15'50.0" E

LAND DETAILS

Khata no.	Plot no.
116	272 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease Deed : 07.09.2017 to 06.09.2027.
2	CO	:	The CO, Sadar, Khunti vide letter no. 489/Ra, dated 19.06.2024 has mentioned the plot no. of the project is not recorded as "Jungle- Jharl" in R.S Khatyan.
3	DMO	:	DMO, Khunti vide memo no. 662/M, dated 31.07.2024 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Ranchi vide letter no. 541, dated 09.06.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.

5	DFO Territorial	:	Division Forest Officer, Khunti Forest Division vide letter no. 493, dated 23.03.2016 certified that the distance of forest is 256 meter from proposed project site.
6	DSR	:	This project is mentioned in approved District Survey Report (DSR) of Khunti District (Sl. no. 09, Page no. 32).
7	Gram Sabha	:	Gram Sabha conducted on 20.07.2015.
8	Mine Plan Approval	:	Approved by AMO, Khunti vide Memo No. 12/M, dated 10.01.2017.
9	Qualified Person	:	Shri J.P. Bhattacharya has confirmed through email 24.10.2024 that the mine plan has been prepared by him.
10	Production Report	:	Production figure issued by DMO, Khunti vide letter no. 663/M, dated 31.07.2024.
11	Compliance report of previous EC	:	Compliance report certified by Regional Office, JSPCB Dhurwa vide letter no. 892, dated 26.07.2024.
12	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Khunti vide letter no. EC/DEIAA/2017-18/49, dated 21.08.2017.
13	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. : JSPCB/HO/RNC/CTE-1874754/2018/47, dated 09.01.2018.
14	Consent to Operate (CTO)	:	CTO issued by JSPCB vide Ref. no. : JSPCB/RO/RNC/CTO-12467296/2022/46, dated 12.02.2022.

Working Details

1	Mining Method	:	Opencast mechanized mining method
2	Quarry Area	:	1.45 ha. or 3.58 Acres Life of Mine – 5 Years
3	Waste Generation	:	12831 m ³
4	Stripping Ratio	:	1:00.1
5	Working Days	:	300
6	Bench: size & No	:	6m x 6m
7	Elevation of Mine	:	597 AMSL to 602 AMSL
8	Ground Level Elevation	:	597 AMSL
9	Ultimate Working Depth	:	576 AMSL (21m bgl)
10	Water Table	:	562 - 560 AMSL (35 - 37 mbgl)
11	Topography of Mine	:	Area represents slight inclination.
12	Explosive Requirement	:	90 kg/day

13 Diesel/Fuel requirement	:	120 litre/day

Production Details (As per DEIAA EC)

Year	Production in EC (tons)	Production of Stone in Cum
1st	30011	11115
2nd	45104	16705
3rd	60045	22239
4th	75044	27794
5th	105030	38900
Total	315234	116753

As per approved mine plan production: - 38900 cum/annum or 105030 TPA

As per EC letter production: - 38900 cum/annum or 105030 TPA

Land Use

Pattern of Utilization	Existing Land Use (Ha)	At the end of End of Mining Scheme Period (Ha)	At Conceptual period (Ha)
Quarry	0.250	0.920	0.920 (Entire area will be converted into water reservoir)
Safety Zone	0.480 (Plantation)	0.480 (Plantation)	0.480 (Plantation)
Dump (Temporary)	0.120	-	-
Road	0.020	0.040	0.040
Total area in use	0.870	1.420	1.420
Balance Area	0.580	0.010	0.010
Lease Area	1.450	1.450	1.450

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Safety Zone	0.480 ha	1200 (Already done during previous year of mining)

2	Along Approach Road	:	180 m	360
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	1760

Note: A total of 3320 saplings were proposed to be planted. Out of which 1200 plant in Safety Zone area have been planted during previous year of mining.

(360 plant along approach road & 1760 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 2120 Plants)

- ♦ Gablon Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

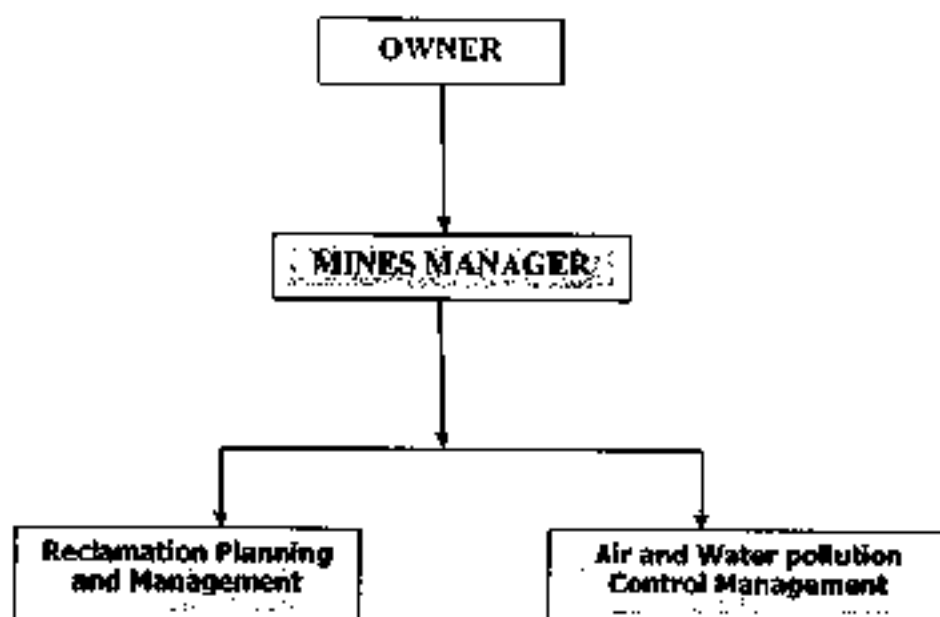
COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	—	2,00,000
2	Baseline Monitoring	..	
	i) Air		14,000
	ii) Water		8,000
	iii) Soil		8,000
	iv) Noise		7,000
3	Plantation	2,30,000	1,00,000
4	Construction and maintenance of haul road	2,00,000	1,50,000
TOTAL		4,30,000	4,87,000

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly

5	Noise	4 Stations	6 Monthly



Organization Structure

Solid Waste Management

It was estimated that around 12831m³ of overburden materials will have to be removed during the mining plan period. To accommodate a total quantity of around 12831m³ of overburden materials a dumping site near northern most side between boundary pillar nos. 5 and 6 has been planned in the mining plan report. The dump location has been marked in the relevant drawings. The overburden zone with an average thickness of 2m and mostly comprising of alluvial cum lateritic soil has been removed from almost entire part of the mining leasehold area planned for stone extraction during mining plan period and thereafter.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.

- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate

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		corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
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4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6

6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
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The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
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While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

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- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, It will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favorable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the Initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department.

Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate

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hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overtaking vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.

- * Only trained drivers will be hired.

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- The Boundary Pillars of the proposed mine lease area will be maintained properly.
- One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- If any tree felling than necessary permission shall be taken from the competent authority.
- Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Gyarappa Stone Mine of Shri Nitesh Sarda, Mouza : Gyarappa, Thana : Khunti, Distt. : Khunti, Jharkhand (1.45 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- During appraisal of the project it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC.
- In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked

green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>)

- III. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

34. Dori Stone Mine of Shri Nitesh Sarda, Mouza : Dori, Thana : Khunti, Distt. : Khunti, Jharkhand (2.916 Ha).

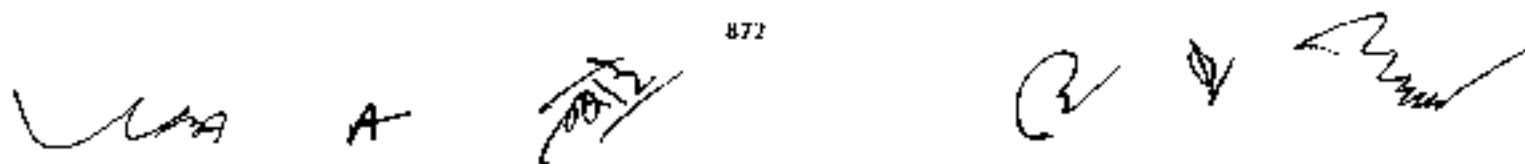
(Proposal No : SIA/JH/MIN/ 502324/2024)

Name of the consultant :P & M Solution, Noida, U.P.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

This is re-appraisal of the EC issued by DEIAA, Khunti which has been taken up for consideration on 24.10.2024. As per O.M. dated 12.12.2018 Issued by MOEF & CC projects fall in category B2.



As per O.M. dated 28th April 2023 Issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

The project has been granted EC by DEIAA, Khunti vide letter no. EC/DEIAA/ 2017-18/50, dated 21.08.2017.

Existing baseline condition as per monitoring report submitted by PP is as follows PM₁₀ - 82.0 $\mu\text{g}/\text{m}^3$ PM_{2.5} - 44.0 $\mu\text{g}/\text{m}^3$ SO₂ - 12.10 NO₂ - 27.09 $\mu\text{g}/\text{m}^3$ - All the data are within the permissible limit.

Data generated by JSPCB empaneled Laboratory has been also submitted by PP. All the data are within prescribed limit.

Dust suppression is being carried out on regular basis.

As per certified compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per letter no. 665/M, dated 31.07.2024 by DMO, Khunti is within the permissible limit of EC.

EC Application for: Proposed Capacity- 55588.88 cum/annum or 150090 TPA.

Project and Location Details:

Sl	Parameter		Details
1	Project Name	:	Dari Stone Mine
2	Lessee:	:	Sri Nitesh Sarda
3	Lease Address	:	Mouza - Dari, P.S.:- Karra, District - Khunti, Jharkhand
4	Lease Area	:	2.916 ha. Acres- 7.20 Acres
5	Type of Land	:	Non-Forest (G.M. Land)
6	Project Cost	:	Rs. 1.20 cr.
7	EMP Budget	:	Capital: Rs. 5.50 Lakhs Recurring: 4.87 Lakhs / year
8	New or Expansion	:	New
9	Mineable Reserves	:	1515684 tons (As per DEIAA EC)
10	Mine Life	:	10 years
11	Man power	:	30
12	Water Requirement	:	7.2 ~ 7.5 KLD (Drinking: 0.30 KLD, Dust Suppression: 5.5 KLD, Plantation: 1.4 KLD)
13	Water Source	:	Water will be taken from nearby village
14	DG Set / power	:	500 KVA
15	Crusher	:	No Crusher
16	Nearest Water Body	:	Torai Nadi, Approx. 4.50 km towards West direction of mine site.
17	Nearest Habitation	:	Approx. 600 m in NW direction
18	Nearest Railway Station	:	Lodhma Railway station, approx. 6.90 km towards NNW direction.

19	Nearest Air Port	:	Birsa Munda Airport, approx. 19.10 km towards NE direction.
20	Nearest Forest	:	Dense Mixed Jungle, Approx. 1.0 km towards North direction of mine site. Dense Jungle mainly Sal, Approx. 4.50 km towards NE direction of mine site.
21	Road & Highways	:	NH-20, Approx. 4.50 km in East direction.

CO-ORDINATES

1	Latitude	:	From N 23°10'05.5"	To N 23°10'11.3"
2	Longitude	:	From E 85°13'53.0"	To E 85°14'1.7"

LAND DETAILS

Khata no.	Plot no.
60	13 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease Deed : 07.09.2017 to 06.09.2027.
2	CO	:	The CO, Karra, Khunti vide letter no. 453/Ra, dated 04.07.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatyan.
3	DMO	:	DMO, Khunti vide memo no. 664/M, dated 31.07.2024 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Ranchi vide letter no. 540, dated 09.06.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Khunti Forest Division vide letter no. 1694, dated 15.10.2016 certified that the distance of forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved District Survey Report (DSR) of Khunti District (Sl. no. 11, Page no. 32).
7	Gram Sabha	:	Gram Sabha conducted on 21.07.2016.
8	Mine Plan	:	Approved by AMO, Khunti vide Memo No. 79/M, dated

	Approval	13.02.2017.
9	Qualified Person	Shri J P Bhattacharya has confirmed through email 24.10.2024 that the mine plan has been prepared by him.
10	Production Report	Production figure issued by DMO, Khunti vide letter no. 665/M, dated 31.07.2024.
11	Compliance report of previous EC	Compliance report certified by Regional Office, JSPCB Dhurwa vide letter no. 891, dated 26.07.2024.
12	Previous Environmental Clearance (EC)	Previous EC granted by DEIAA, Khunti vide letter no. EC/DEIAA/2017-18/50, dated 21.08.2017.
13	Consent to Establish (CTE)	CTE issued by JSPCB vide Ref. no. : JSPCB/HO/RNC/CTE-1874696/2018/46, dated 09.01.2018.
14	Consent to Operate (CTO)	CTO issued by JSPCB vide Ref. no. : JSPCB/RO/RNC/CTO-12467215/2022/51, dated 19.02.2022.

Working Details

1	Mining Method	:	Opencast mechanized mining method	
2	Quarry Area	:	2.916 hectare or 7.20 Acres	Life of Mine – 10 Years
3	Waste Generation	:	16165 m ³	
4	Stripping Ratio	:	1:00.02	
5	Working Days	:	300	
6	Bench: size & No	:	6m x 6m	
7	Elevation of Mine	:	635 AMSL to 643 AMSL	
8	Ground Level Elevation	:	635 AMSL	
9	Ultimate Working Depth	:	592 AMSL (43 mbgl)	
10	Water Table	:	577-575 AMSL (58- 60 mbgl)	
11	Topography of Mine	:	Area represents a slight inclination.	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	140 litre/day	

Production Details

Year	Production in EC (tons)	Production of Stone in Cum
1st	150074	55583
2nd	150058	55577
3rd	150058	55577
4th	150090	55589
5th	150069	55581
Total	600232	277907

As per approved mine plan production: - 55596 cum/annum or 150109 TPA

As per EC letter production: - 55588.88 cum/annum or 150090 TPA

Land Use

Pattern of Utilization	Present Land Use (in Ha)	At the end of the Mine Plan period (Ha)	At the end of Conceptual period (Ha)
Quarry	0.300	1.300	2.000 (Entire area will be converted into water reservoir)
Safety Zone	0.740 (Plantation)	0.740 (Plantation)	0.740 (Plantation)
Dump (Temporary)	0.130	0.130	--
Road	0.060	0.060	0.060
Office complex	0.100	0.100	0.100
Total area in use	1.330	2.330	2.900
Balanced Area	1.586	0.586	0.016

Total Lease area	2.916	2.916	2.916

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Safety Zone	0.740 ha	1850 (Already done during previous year of mining)
2	Along Approach Road	300 m	600
3	No. of plants distributed with consultation local authorities /village Panchayat	--	2650

Note: A total of 5100 saplings were proposed to be planted. Out of which 1850 plant in Safety Zone area have been planted during previous year of mining.

(600 plant along approach road & 2650 plants with consultation from local authorities/ village Panchayat) will be done in the first year of operation. (Total 3250 Plants)

- Gablon Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

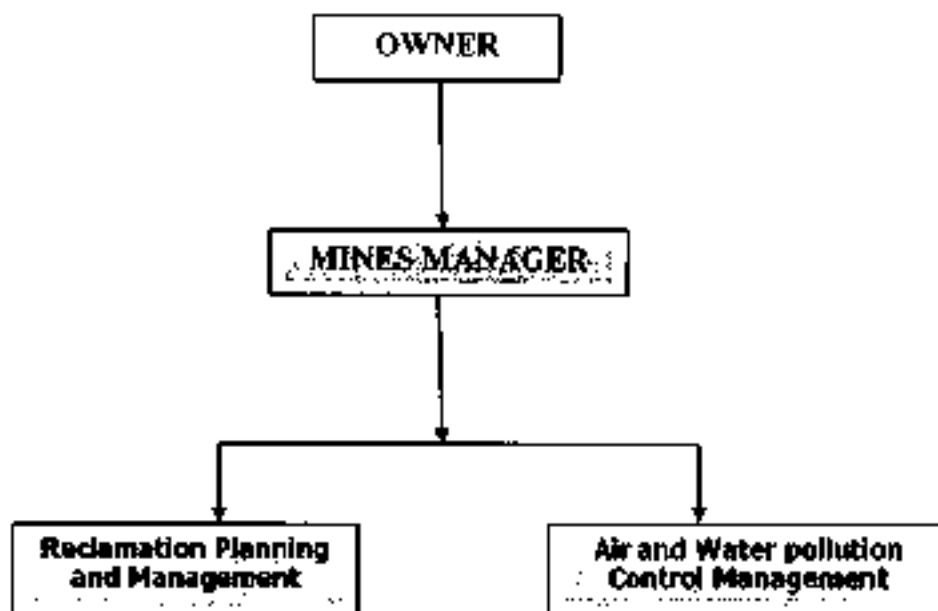
COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	14,000 8,000 8,000 7,000
3	Plantation	3,50,000	1,00,000
4	Construction and maintenance of haul road	2,00,000	1,50,000
TOTAL		5,50,000	4,87,000

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration

1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly



Organization Structure

Solid Waste Management

It was estimated that around 16165m³ of overburden materials will have to be removed during the mining plan period. To accommodate a total quantity of around 16165m³ of overburden materials a dumping site near eastern most side between boundary pillar nos. 2 and 3 has been planned in the mining plan report. The dump location has been marked in the relevant drawings.

The overburden zone with an average thickness of 2m and mostly comprising of alluvial cum lateritic soil has been removed from almost entire part of the mining leasehold area planned for stone extraction during mining plan period and thereafter.

Water Quality Management

- Mining is planned to above the ground water table. In case any Intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be

constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside

- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

The hazard Identification and risk analysis is done using qualitative method:

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe

		activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage	Unintended	Very	Catastrophic	5

	of Explosives	Explosion	Unlikely		
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily Injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Face Stability

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling

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- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

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- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department.

Few conditions are listed below:

Handwritten signatures and initials at the bottom of the page, including a large 'A' and a signature that appears to be 'B'.

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overtuning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge

of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.

- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Dari Stone Mine of Shri Nitesh Sarda, Mouza : Dari, Thana : Khunti, Distt. : Khunti, Jharkhand (2.916 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- I. During appraisal of the project it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC.
- II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- III. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- IX. Failing of any of terms & conditions mentioned in LC can lead to revocation / cancellation of EC.

C. Matter referred by SEIAA regarding inspection and monitoring of Remediation Plan and submit the report to SEIAA for release of Bank Guarantee submitted by Project Proponent to Jharkhand State Pollution Control Board (JSPCB).

i. "Proposed Multistoried Apartment" of M/s Oceanic Buildtech & Construction Pvt. Ltd., Village : Argora, Thana : Argora, Thana no. : 207, Tehsil : Argora, Dist. : Ranchi, Jharkhand.

The Project Authority did not appear for consideration during the SEAC meeting.

Day 4 : October 25th, 2024 [Friday]

Consideration of proposals :

1. Chakwa Sand Ghat of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Chakwa, Circle : Pathargama, Distt. : Godda, Jharkhand (3.52 Ha).

(Proposal No : SIA/JH/MIN/ 502096/2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

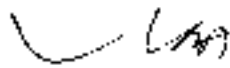
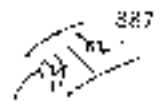
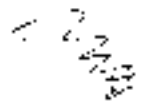
This is a new project which has been taken for appraisal on 25.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Applcation for Environmental Clearance.

During appraisal it was seen that the letter no. 1819, dated 30.12.2022 from DFO, Godda Forest Division, Godda stated that the project is out side the forest area. However, the distance of the forest boundary from the project boundary has not been specified in the above letter.

In view of the above the Sand Incharge, JSMDC vide letter no. 2224, dated 25.10.2024 has requested for deferment of the proposal.

Accordingly, the project is recommended for deferment. The project will be taken up for consideration after obtaining a fresh certificate from DFO Territorial stating the exact distance of the forest boundary from the project boundary.

2. Brick Earth Mining Project of M/s Sona Bricks (Prop. :Mr. Shakil Ansari), Village : Soranda, Distt. : Lohardaga, Jharkhand (0.83 Ha).

(Proposal no.: SIA/JH/MIN/ 498430 /2024)

Name of the consultant :Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 25.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for : Proposed Capacity- 1584 cum soil/Season or 6,00,000 Bricks/Season.

Project and Location Details:

Sl	Parameter	Details
1.	Project Name	BRICK EARTH CLAY MINING
2.	Lessee:	M/s Sona Bricks Shakil Ansari
3.	Lease Address	Village : Soranda Thana, Lohardaga, Distt. Lohardaga, Jharkhand
4.	Lease Area	0.83 ha Acres-2.05 Acres
5.	Type of Land	Non forest Barayat Land
6.	Project Cost	Rs. 15.75 Lakhs
7.	EMF Budget	Capita. 6.20 Lakh Recurring: 1.88 Lakh / year
8.	New or Expansion	New
9.	Mineable Reserves	Cumt. 1584 cum Tonnes NA
10.	Mine life	5 year
11.	Man power	15
12.	Water Requirement	2.415 KLD (Drinking 0.37 KLD, Dust Suppression: 1.9 KLD) Plantation: 0.89 KLD

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13.	Water Source	: From Nearby villages by tankers
14.	DS Set /power	:
15.	Crusher	: No crusher
16.	Nearest Water Body	: Bura Nala Approx 5 Km towards East direction.
17.	Nearest Habitation	: Asna, Approx. 0.7 km towards North direction.
18.	Nearest Rail Station	: Akasi: 14 Km NW
19.	Nearest Airport	: Birsa Munda Airport, at a distance of 64.0 km in ESE direction from mine site.
20.	Nearest Forest	: Not within 250 meter (as per DFO certificate)
21.	Road & highways	: Bhandra – Lohardaga Road – 10 Km (N)

CO-ORDINATES

1	Latitude	From 23°20'05.03"N	To 23°20'02.93 N
2	Longitude	From 84°48'10.73 E	To 84°48'13.99"E

LAND DETAILS

Khata no.	Plot no.
67	205 & 206

STATUTORY CLEARANCES

1	LOI / Lease docs	: Land agreement made.
2	CO	: The CO, Bhandra (Lohardaga) vide letter no. 647, dated 17.10.2023 has mentioned the plot no. of the project is not recorded as "Jungle- free," in R.S. Khatiyon & Register II.
3	DMD	: DMD, Lohardaga vide memo no. 692/M, dated 19.09.2024 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild life	: DFO, Wildlife Division, Ranchi vide letter no. 1159, dated 07.11.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palakot Wildlife Sanctuary.

5	DDO Territorial	Division Forest Officer, Lohardaga Forest Division vide letter no. 1402, dated 11.10.2023 certified that the distance of reserved & protected forest is more than 250 meter from proposed project site.
6	DSR	This project is mentioned in approved District Survey Report (DSR) of Lohardaga District (Sl. no. 59, Page no. 33).
7	Gram Sabha	DDO, Bhaurua (Lohardaga) vide letter no. 1103, Dated: 17.10.2023 informed that Gram Sabha conducted on 11.10.2023.
8	Mine Plan Approval	Approved by DMO, Lohardaga vide Memo No. 11/M, dated 05.01.2024.
9	Qualified Person	Shri Surendra Sar was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	Open cast Manual Mining method
2	Quarry Area	1.13 ha Life of Mine – 7.46 or 7.50 Years
3	Waste Generation	0.00 cum
4	Stripping Ratio	0:0
5	Working Days	150
6	Bench size & No	--
7	Elevation of Mine	661 AMSL to 660 AMSL
8	Ground Level Elevation	--
9	Ultimate Working Depth	2 mtr
10	Water Table	645 mRL
11	Topography of Mine	Area represents flat topography
12	Explosive Requirement	--
13	Diesel/Fuel requirement	--

Production Details

Year	Production of Sub Soil in cum	Production of Bricks Block in no.

1st	1584	600000
2nd	1584	600000
3rd	1584	600000
4th	1584	600000
5th	1584	600000
Total	7920	3000000

Land Use

SL	Pattern	Existing Land Use (Ha)	Proposed Land Use at End of Life of Mine (Ha)
1	Quarry Area	0.000	0.396
2	Safety Barrier / Berm Area	0.000	0.039
3	Road	0.04	0.0
4	Balanced	0.80	0.394
	TOTAL	0.83	0.83

ENVIRONMENT MANAGEMENT

Green Belt Development

S.No.	LOCATION	Area/Length	No of Trees
1	Safety Zone	0.393ha	250
2	Haul /Approach Road	0.04 km	320
	No. of Plants distributed	--	570
3	in Anganwadi, Panchayat Bhawan or in schools		

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be

undertaken for the life of mine as per norms and schedule issued by PCCI, Development Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Solid Waste Management

There is no generation of waste.

Environment Management Plan

Sl. No.	ITEM DESCRIPTION	Capital Investment (INR in Lakhs)	Recurring Cost/Yr. (INR in Lakhs)
1	Water Sprinkling & Dust Suppression	5.00	1.00
2	Green Belt & Plantation	1.20	0.25
3	Pit leveling	0.50	0.08
4	Health	00	0.30
5	Education	00	0.25
TOTAL		6.70	1.88
Environmental Monitoring			
4. a	Air Quality Monitoring – twice a year		0.40
4. b	Water Quality Monitoring – twice a year		0.25
4. c	Noise level Monitoring – twice a year		0.25
TOTAL			0.90
GRAND TOTAL		6.70	2.23

Note: $4570 \text{ plants} \times 500 \text{ Rs (for each plants including hedges)} = 1.20 \text{ lakhs}$

Salary of Labor for haul road maintenance $1 \text{ labor} \times 300 = 300 \text{ per day}$

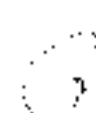
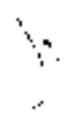
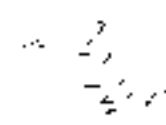
$300 \times 150 = 45,000/-$

Environment Monitoring Programme :

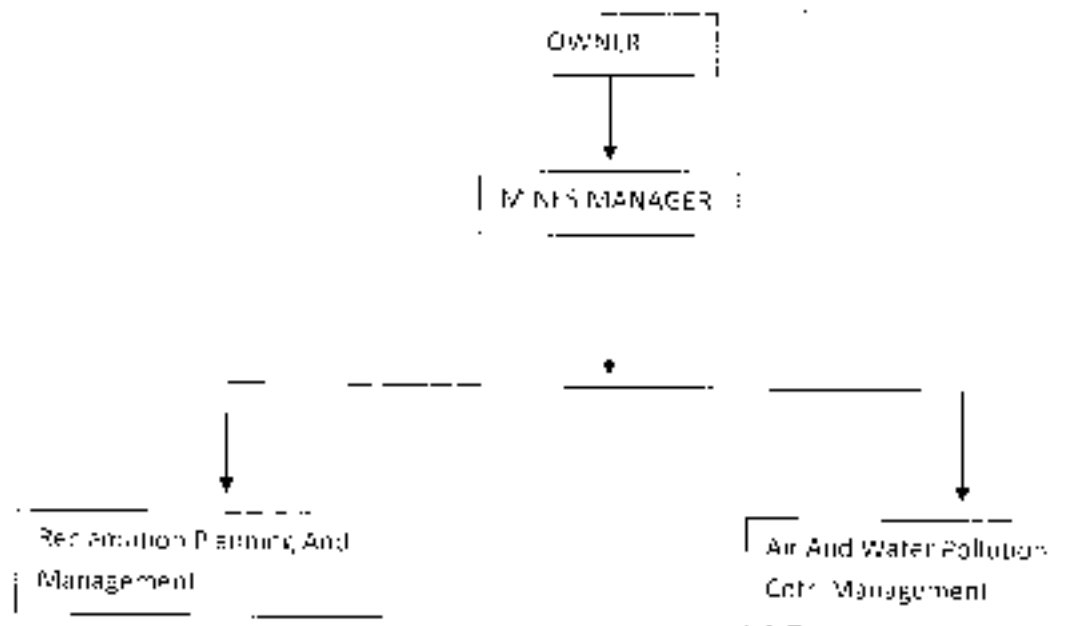
S. No.	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly





2	Soil	2 Stations	5 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly



Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp or H bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on kaccha road shall be done.
- Water sprinkling at loading area shall be done.
- Use of personal protective equipment like dust mask etc shall be put in practice.
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSOCIATED WITH PROJECT ACTIVITIES AND THEIR MITIGATION MEASURES ARE DISCUSSED BELOW:

Road accidents

Transportation of same drug, the public road may cause accident which may cause the loss.

Preventive measures.

1. Ensure speed limit for the road age range for 40 KM/PH
2. Regular maintenance of the road
3. Appropriate navigational signs informing sensitive area like school and habitation
4. Regular maintenance of the vehicles.

Dust generation

- No drilling involved
- Dust mass would be supplied to workers
- Regular sprinkling of water on road

Noise Generation

Source of noise pollution in the project would be movement of tippers / tractors transporting sand from mine to stock yard. In general tippers / tractors produce a noise level of 75 – 90 dBA measured at distance of 5m from the source.

Preventive measures

- Transportation activities would be confined during day time only.
- There would be a speed limit of 40 kmph for tippers. Higher is speed higher is no. of accidents.
- Regular repair and maintenance of tippers/tractors.
- Plantation on both sides of haulage road.
- Tippers having PUC certified will be allowed to be used for sand transportation.

Health Hazards

During digging and handling of sand i.e. loading, transportation and unloading of sand, workmen would be exposed to inhalation of fine dust particles. This poses a health hazard.

Measures

Following put out measures would be taken to minimize this impact on health

- Regular water sprinkling on haulage roads
- Tree plantation on both sides of haulage road
- Tippers / Tractors carrying sand would be covered
- Mask would be provided to workmen employed for digging, loading, transportation and unloading activities

Accident at Site

This is a project with only source of accident at site would be movement of tipper/tractor, within mine site for transportation of sand.

Preventive measures

Following mitigation measures would be taken to minimize risk of road accident:

- Separate alignment for movement of loaded vehicles coming out of mine site

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- c. If any changes are noticed in future regarding the cost of green / cluster area report issued by the mines department, then the application / cost / area will be directly to the Project Authority and all necessary steps will be taken in this regard.
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Hereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machines / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree falling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gazon plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Brick Earth Mining Project of M/s Sona Bricks (Prop. : Mr. Shakil Ansari), Village : Soranda, Distt. : Lohardaga, Jharkhand (0.83 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - II along with following specific conditions :

- I. In compliance of O.M no F No. /A3-22/3/2024-IA.III (F-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Let's Plant More Trees" and the details of the same shall be uploaded in the Mines PL Portal (<https://minespl.nic.in/>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

3. Kranti Brick Clay Deposit of Shri Ramnaresh Sharma, Village : Taku, Distt. : Lohardaga, Jharkhand (0.44 Ha).

(Proposal no.: SIA/JH/MIN/ 498467 /2024)

Name of the consultant :Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 25.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

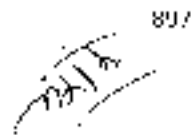
EC Application for : Proposed Capacity- 1584 cum soil/Season or 6,00,000 Bricks/Season.

Project and Location Details:

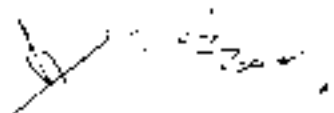
Sl	Parameter	Details
1.	Project Name	KRANTI BRICK CLAY
2.	Lessee:	RAM NARESH SHARMA,
3.	Lease Address	Village- TAKU, P.S. KURU Dist- Lohardaga Jharkhand (0.44 Ha).
4.	Lease Area	0.44 Ha Acres-1.10 Acres
5.	Type of Land	Non Forest – Baiyati Land
6.	Project Cost	Rs. 16.35 Lakhs
7.	EMP Budget:	Capital 6.50 Lakh Recurring: 2.05 Lakh / year
8.	New or Expansion	New
9.	Mineable Reserves	Cum.: 1584 cum Tonnes NA
10.	Mine life	6 year
11.	Man power	15
12.	Water Requirement	2.95 / KLD (Drinking:0.37 KLD, Dust Suppression: 1.4 KLD) Plantation: 1.1 KLD
13.	Water Source	From Nearby villages by tankers
14.	DG Set /power	-
15.	Crusher	No crusher
16.	Nearest Water Body	Ranti Nadi - 1.5 KM South direction
17.	Nearest Habitation	Asna, Approx. 0.7 km towards North direction.
18.	Nearest Rail Station	Lohardaga Railway Station - 14 Km NW
19.	Nearest Airport	Bisa Munda Airport, at a distance of 64.0 km in SSE direction from mine site.



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20. Nearest Forest : Not within 250 meter (as per DFO certificate)
21. Road & Highways : Kuru Gumla Road – 2.5km (N)

CO-ORDINATES

1. Latitude : From 23°30'46.80" N To 23°30'44.56" N
2. Longitude : From 84°48'48.50" E To 85°04'52.34" E

LAND DETAILS

- Khata no. Plot no.
- 85 & 18 652 & 655

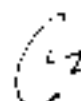
STATUTORY CLEARANCES

1. LCI / Lease docs : Land agreement made.
2. CO : The CO, Kudu, vide letter no. 881, dated 03.08.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Char" in K.S. Khatiyar & Register II.
3. DMO : DMO, Lohardaga vide memo no. 567/M. dated 13.08.2024 certified that no other mining lease area exists within 500 m radius from proposed project site.
4. DFO Wildlife : DFO, Wildlife Division, Ranchi vide letter no. 452, dated 08.06.2024 certified that the proposed project site is outside Eco Sensitive Zone of Pakhal Wildlife Sanctuary.
5. DFO Territorial : Division Forest Officer, Lohardaga Forest Division vide letter no. 1739, dated 30.09.2023 certified that the distance of reserved, protected forest is more than 250 meter from proposed project site.
6. DSR : This project is mentioned in approved District Survey Report (DSR) of Lohardaga District (Sr. no. 41, Page no. 29).
7. Gram Sabha : BDO, Kudu, Lohardaga vide letter no. 484/Sa. Dated 10.08.2024 informed that Gram Sabha conducted on 27.09.2023.

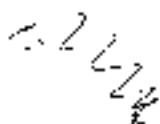












8	Mine Plan Approval	:	Approved by DMO, Lohardaga vide Memo No. 1138/M, dated 26.09.2023.
9	Qualified Person	:	Shri Surendra Sai was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Manual Mining method
2	Quarry Area	:	0.44 ha Life of Mine – 6 Years
3	Waste Generation	:	0.0cu.m
4	Stripping Ratio	:	0: 0
5	Working Days	:	150
6	Benchest size & No	:	--
7	Elevation of Mine	:	661 AMSL to 660 AMSL
8	Ground Level Elevation	:	--
9	Ultimate Working Depth	:	2 mtr.
10	Water Table	:	645 mRL
11	Topography of Mine	:	Area represents flat topography
12	Explosive Requirement	:	--
13	Diesel/Fuel requirement	:	--

Production Details

Year	Production of Sub Soil in cum	Production of Bricks Block in no.
1st	1584	600000
2nd	1584	600000
3rd	1584	600000
4th	1584	600000

Sth	1584	600000
Total	7920	3000000

Land Use

SL	Pattern	Existing Land Use (Ha)	Proposed Land Use at End of Life of Mine (Ha)
1	Quarry Area	0.000	0.396
2	Safety Barrier / Berm Area	0.000	0.03
3	Road	0.03	0.0
4	Balanced	0.41	0.01
	TOTAL	0.44	0.44

ENVIRONMENT MANAGEMENT

Green Belt Development

S.No.	LOCATION	Area/Length	No of Trees
1	Safety Zone	0.396ha	250
2	Haul /Approach Road	0.04 km	346
3	No. of Plants distributed in Anganwadi, Panchayat Bhawan or in schools	--	596

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Solid Waste Management

There is no generation of waste.

Environment Management Plan

Sl. No.	ITEM DESCRIPTION	Capital Investment (INR in Lakhs)	Recurring Cost/Yr. (INR in Lakhs)
1	Water Sprinkling & Dust Suppression	5.00	1.00
2	Green Belt & Plantation	1.20	0.25
3	Pit leveling	0.50	0.08
4	Health	00	0.30
5	Education	00	0.25
TOTAL		6.70	6.50
4. Environmental Monitoring			
4. a	Air Quality Monitoring – twice a year		0.40
4. b	Water Quality Monitoring twice a year		0.25
4. c	Noise level Monitoring twice a year		0.25
TOTAL			0.90
GRAND TOTAL		6.70	2.23

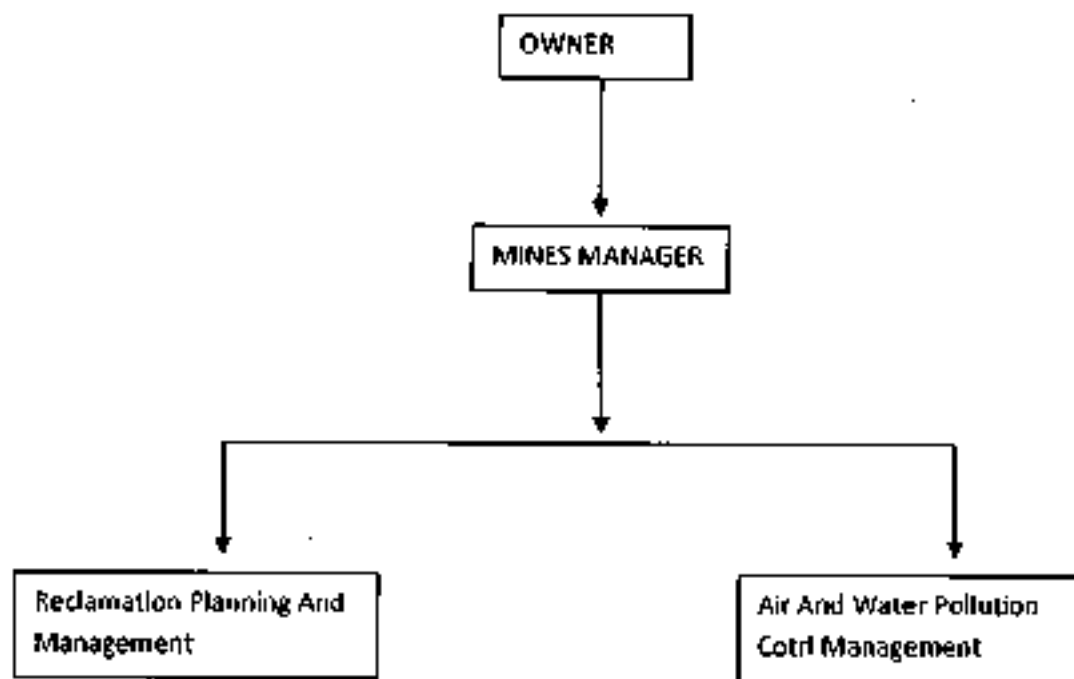
Note: *596 plants * 500 Rs (for each plants including hedges) = 1.10lakhs

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

300* 150 = 45,000/-

Environment Monitoring Programme :

S. No.	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly



Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, If any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- It shall be ensured that quality of drinking water for the worker is hygienic and goodsanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice.
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSOCIATED WITH PROJECT ACTIVITIES AND THEIR MITIGATION MEASURES ARE DISCUSSED BELOW:

Road accidents

Transportation of sand along the public road may cause accident which may cause injury.

Preventive Measures;

1. Ensure speed limit for the haulage vehicle for 40 KMPH.
2. Regular maintenance of haulage road
3. Appropriate navigational signs informing sensitive area like school and habitation
4. Regular maintenance of the vehicles.

Dust generation

- No drilling involved
- Dust mass would be supplied to workers.
- Regular sprinkling of water on road

Noise Generation

Source of noise pollution in the project would be movement of tippers / tractors transporting sand from mine to stock yard. In general tippers / tractors produce a noise level of 75 – 90 (A) measured at distance of 3m from the source.

Preventive measures

- Transportation activities would be confined during day time only.
- There would be a speed limit of 40 kmph for tippers. Higher is speed higher is noise.
- Regular repair and maintenance of tippers/tractors.
- Plantation on both sides of haulage road.
- Tippers having PUC certified will be allowed to be used for sand transportation.

Health Hazards

During digging and handling of sand i.e. loading, transportation and unloading of sand, workmen would be exposed to inhalation of fine dust particles. This poses a health hazard.

Measures

Following mitigation measures would be taken to minimize this impact on health

- Regular water sprinkling on haulage roads
- Tree plantation on both sides of haulage road
- Tippers / Tractors carrying sand would be covered
- Mask would be provided to workmen employed for digging, loading, transportation and unloading activities

Accident at Site

This is a project with only source of accident at site would be movement of tippers /tractors within mine site for transportation of sand.

Preventive measures

Following mitigation measures would be taken to minimize risk of road accident:

- Separate alignment for movement of loaded vehicles coming out of mine site

- Ensure speed restriction of 10 KMPH within mine site for incoming and outgoing tippers
- Regular maintenance and repair of haulage vehicles employed for sand transportation
- No overtaking of transportation vehicles within mine site
- Proper maintenance of haulage roads

Transportation

The usual method of transporting minerals from the working face is by tractor. Large earth moving equipment's are not used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road/approach road shall be made smooth regularly with a road roller.
- Mine road/approach road will be cleaned daily for smooth transportation.
- Mine road/approach road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.

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- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Kranti Brick Clay Deposit of Shri Ramnaresh Sharma, Village : Taku, Distt. : Lohardaga, Jharkhand (0.44 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.

4. Rudiya Stone Deposit of Shri Yashraj Mahto, Village : Rudiya, Thana no. : 251, Thana : Chandil, Distt. : Saraikela-Kharsawan, Jharkhand (1.54 Ha).

(Proposal no.: SIA/JH/MIN/ 502129 /2024)

Name of the consultant :Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 25.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

Environment Clearance Application for: Proposed Capacity- 26,289 cum/annum or 73,608 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Rudiya Stone Deposit Project Type – Stone Mine
2	Lessee:	Sri Yashraj Mahato
3	Lessee Address	Village- Rudiya, Thana - Chandil, Thana No.- 251, District- Saraikela-Kharsawan, State- Jharkhand.
4	Lease Area	3.80 Acres (1.54 Ha)
5	Type of Land	Non Forest Relyatl Land
6	Project Cost	Capital: 67.05 Lakhs Recurring: 9.87 Lakhs per year
7	EMP Budget	Capital: 8.20 Lakhs Recurring: 4.82 Lakhs per year
8	New or Expansion	New
9	Mineable Reserves	cum.: 1,31,374 cum Tonnes: 3,67,848 tons
10	Mine Life	5 years.
11	Man power	32 Person
12	Water Requirement	6.46 KLD (Drinking: 0.48 KLD, Dust Suppression: 2.832 KLD, Plantation: 3.144 KLD)
13	Water Source	From Nearby villages by tankers

14	DG Set / power	:	60 KVA D.G. Set proposed
15	Crusher	:	No crusher
16	Nearest Water Body	:	Subarnarekha River – 0.56 km – S-W direction
17	Nearest Habitation	:	Rudliya Village at 0.8 km North direction
18	Nearest Rail Station	:	Manikui Railway Station is 3.20 km (aerial distance) in East direction.
19	Nearest Air Port	:	Birsa Munda Airport, Ranchi at 84.56 km N-W Direction.
20	Nearest Forest	:	DFO Seraikela Forest Division letter no.- 1536 Dated: 18/8/2023 certified that the distance of reserved / protected forest is more than 250 m from proposed project site.
21	Road & Highways	:	NH-43 at 1.75 km (aerial distance) East direction

CO-ORDINATES

1	Latitude	From N 22° 55' 09.32556116"	To N 22° 55' 16.99224657"
2	Longitude	From E 86° 02' 05.05410487"	To E 86° 02' 10.70272324"

LAND DETAILS

Khata no.	Plot no.
40	1029
61	1033

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LOI) has been issued by District Mining Officer, Saraikella- Kharsawan vide letter no. 157/M, dated 09.03.2024.
2	CO	:	The CO, Chandil vide letter no. 687, dated 28.07.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyon & Register II.
3	DMO	:	DMO, Saraikella-Kharsawan vide letter no. 329/M, dated 24.04.2024 certified that 01 other mining lease area (3.48 Acre) exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO, Dalma Elephant Project vide letter no. 1284, dated

		21.08.2023 certified that the proposed project site is outside Eco Sensitive Zone of Dalma Wildlife Sanctuary.
5	DFO Territorial	Division Forest Officer, Saraikela Forest Division vide letter no. 1536, dated 18.08.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	This project is mentioned in approved DSR of Saraikela-Kharsawan District (Sl. no. 04, Page no. 168).
7	Gram Sabha	BDO, Chandil vide letter no. 993, dated 13.09.2023 informed that Gram Sabha conducted on 24.08.2023.
8	Mine Plan Approval	Approved by District Mining Officer, Saraikella-Kharsawan vide Letter No. 743/M, dated 23.07.2024.
9	Qualified Person	Shri P.K. Sen was through letter dated 25.10.2024 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method	
2	Quarry Area	:	1.07 Ha	Life of Mine – 5 year
3	Waste Generation	:	6,916 cum. Intercalated	5,097 cum. Gritty soil
4	Stripping Ratio	:	1:10.93 or 0.09	
5	Working Days	:	300	
6	Bench: size	:	6 m x 6 m	
7	Elevation of Mine	:	151 to 148 m AMSL	
8	Ground Level Elevation	:	151 m AMSL	
9	Ultimate Working Depth	:	26 m	
10	Water Table	:	(During pre-monsoon 105 m AMSL) (During post-monsoon 116 m AMSL)	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	63 kg Slurry explosives/day	
13	Diesel/Fuel requirement	:	HSD – 209 liters / day (63 KL/year)	

Production Details

SUMMARY OF YEARWISE OF PRODUCTION

Years	Production In Cum/Year	Production In Cum/Day	Intercalated Waste In Cum/Year	Gritty Soil In Cum/Year	Production In Tons/Year	Prod. In Tons./Day
1 st	26235	87.45	1381	2985	73458	244.86
2 nd	26277	87.60	1383	0.0	73576	245.25
3 rd	26283	87.61	1384	2112	73591	245.30
4 th	26277	87.60	1383	0.0	73576	245.25
5 th	26289	87.63	1385	0.0	73608	245.36
Total	1,31,361	87.63 Max	6916	5097	3,67,809	245.36 Max.

LAND USE

Existing, Proposed & Conceptual Land Use

SL. No.	Pattern	Existing Land Use (Ha)	Proposed Land Use (Ha)	Conceptual Land Use (Ha)	Area to be converted in the conceptual period.
1	Quarry	0.00	1.07	1.07	Water body
2	Mining Road	0.00	0.08	—	Water body
3	Safety Zone	0.00	0.47	0.47	Greenbelt
4	Unutilized	1.54	—	—	—
	TOTAL	1.54	1.54	1.54	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.47 Ha	752
2	Along Approach Road	0.445 km	296
TOTAL			1,048

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same

to be maintained and will be submitted with compliance report.

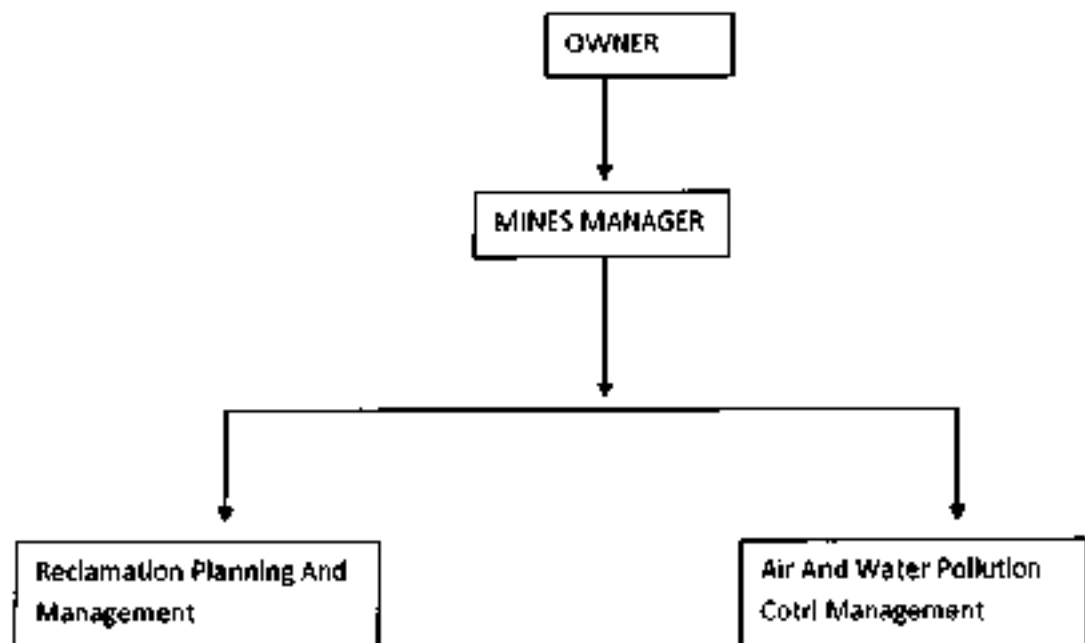
EMP BUDGET

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. (Rs. 900 per Tanker)	----	2,70,000
2	Plantation 296 X 800 = Rs 2,36,800 (Gabion Plantation along approach road) 752 X 400 = 3,00,800 (Plantation within lease area) (also Includes Fertilizer, Pesticides, Maintenance)	5,37,600	53,760
3	Environmental Monitoring (One Day Monitoring) ♦ Ambient Air 24 hrs (3 point) - Rs.27,270 ♦ Ground Water (2 point) - Rs.12,420 ♦ Noise 24 hrs (3 point) - Rs.21,000 ♦ Soil (3 point) -Rs.40,920 Total -Rs. 1,01,610 (Per Season) At least two seasons in a Year -Rs.1,01,610 x2 = Rs. 2,03,220 Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022	---	2,03,220
Total		5,37,600	5,26,980

Environment Monitoring Programme

Sl. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	One Day Monitoring (within 6 months)
2.	Water	2 stations	One Day Monitoring (within 6 months)
3.	Soil	3 stations	One Day Monitoring (within 6 months)
4.	Noise	3 stations	One Day Monitoring (within 6 months)

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Solid Waste Management

6,916 cum. Intercalated Waste & 5,097 cum. Gritty soil shall be generated during the plan period which shall be backfilled within the exhausted quarry.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced
- Optimum quantity of explosives would be used.
- Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on Haul road by using water Tankers.
- ✓ Regular repair of Haul road
- ✓ All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Hazard Identification & Risk Analysis in Stone Mining operation

S. No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- ♦ Overall slope angles of benches will be maintained at 45°
- ♦ Unmanageable heights are not created
- ♦ Loose sides are properly dressed

- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

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Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drilling itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department.

Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.

- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.

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- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- The Boundary Pillars of the proposed mine lease area will be maintained properly.
- One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- If any tree felling than necessary permission shall be taken from the competent authority.
- Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Rudiya Stone Deposit of Shri Yashraj Mahto, Village : Rudiya, Thana no. : 251, Thana : Chandil, Distt. : Saralkela-Kharsawan, Jharkhand (1.54 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and

the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).

- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to be submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

5. Manjhladih Stone Mine of M/s Shristhi Stone Works (Prop. : Shri Dharmendra Kumar Singh), Village : Manjhladih, Thana no. : 06, Thana : Shikaripara, Distt. : Dumka, Jharkhand (1.81 Ha).

(Proposal no.: SIA/JH/MIN/ 501113 /2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 25.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 12845 Cum. (Max.) / 34682 Tons (max.) per year.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Manjhladih Stone Mine
2	Lessee:	: M/S Shristhi Stone Works Proprietor- Shri Dharmendra Kumar Singh
3	Lessee Address	: Village-Shikaripara, Post- Shikaripara, Thana- Shikaripara, District- Dumka, State-Jharkand
4	Lease Area	: 1.81 Ha
5	Type of Land	: Non Forest Raiyati Land
6	Project Cost	Capital Cost: Rs. 62.81 Lakhs Recurring Cost: Rs. 2.235 Lakhs
7	EMP Budget	Capital Cost: Rs. 9.408 Lakhs Recurring Cost: Rs. 5.588 Lakhs
8	New or Expansion	: New
9	Mineable Reserves	: 42,988 cum 1,16,068 tons
10	Mine Life	: 5 years.
11	Man power	: 29 Person
12	Water Requirement	: 7.5 KLD (Drinking: 0.435 KLD, Dust Suppression: 2.60 KLD, Plantation: 4.463 KLD)
13	Water Source	: From Nearby villages by tankers
14	OG Set / power	: 60 KVA D.G. Set proposed
15	Crusher	: No crusher
16	Nearest Water Body	: Brahmani river at 18.14 km NE direction
17	Nearest Habitation	: Manjhladih Village – 0.70 Km in E Direction
18	Nearest Rail Station	: Pinargana Railway Station at aerial distance of 6.24 km in NE direction.
19	Nearest Air Port	: Deoghar Airport is at aerial distance of 95.45 km NW direction.
20	Nearest Forest	: More than 250 m, as per Division Forest Officer NOC. letter no.- 658 Dated- 01/03/2023
21	Road & Highways	: The distance of NH 114/A is 2.11 km in North direction

CO-ORDINATES

Point Name	Latitude	Longitude
1	24° 11' 50.034" N	087° 34' 58.656" E
To		

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2	24° 11' 56.131" N	087° 34' 58.234" E

LAND DETAILS

Khata no.	Plot no.
12	1377 (P)
27	1376, 1378, 1379 & 1395 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Dumka vide letter no. 311/M, dated 13.03.2024.
2	CO	:	The CO, Shikaripara vide letter no. 258/Ra, dated 14.03.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatriyan & Register II.
3	DMO	:	DMO, Dumka vide memo no. 496/M, dated 01.04.2023 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 470, dated 04.03.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Dumka Forest Division vide letter no. 658, dated 01.03.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Dumka District (Sl. no. 08, Page no. 140).
7	Gram Sabha	:	Gram Sabha conducted on 05.11.2022.
8	Mine Plan Approval	:	Approved by District Mining Officer, Dumka vide Letter No. 802/M, dated 12.07.2024.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi-Mechanized Method	
2	Quarry Area	:	1.81 Ha	Life of Mine – 5 year

3	Waste Generation	:	5,077 cum	
4	Stripping Ratio	:	10:07	
5	Working Days	:	300	
6	Bench: size	:	6 m x 6 m,	
7	Elevation of Mine	:	120m RL- 104m RL	
8	Ground Level Elevation	:	104 m RL	
9	Ultimate Working Depth	:	16m	
10	Water Table	:	Post Monsoon - 3-6 mbgl Pre Monsoon - 6-9 mbgl	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	16 kg Slurry explosives/day	
13	Diesel/Fuel requirement	:	HSD - 97.02 liters / day (29.106 KL/year)	

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum
1st	12845	2.7	34682	43	116	5077
2nd	12441	2.7	33591	41	112	0
3rd	3244	2.7	8759	11	29	0
4th	6132	2.7	16556	20	55	0
5th	8316	2.7	22453	28	75	0
Total	42978	2.7	116041	29	77	5077

Land Use

EXISTING, PROPOSED & CONCEPTUAL LAND USE

SL	Pattern	Existing Land Use (Ha)	Proposed Land Use (Ha)	Conceptual Land Use (Ha)	Area to be converted in the conceptual period.
1	Mining Activities	0.83	1.38	1.38	Water body
2	Mining Road	0.000	0.008	0.008	Water body
3	Garland drain	0.000	0.028	0.028	-
4	Green belt/Safety Zone	0.000	0.39	0.39	Green belt
5	Unutilized	0.98	0.000	0.000	-
	TOTAL	1.81	1.81	1.81	








ENVIRONMENT MANAGEMENT**Green Belt Development**

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.39 Ha	864
2	Along Approach Road	0.650m	624
TOTAL			1488

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.
- Budget for Environmental Management**

Sl. No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. (Rs. 1000 per Tanker)	--	3,00,000
2	Plantation 864 X 800 = Rs 6,91,200 (Gabion Plantation along approach road) 624 X 400 = 2, 49,600 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	9,40,800	1,25,000
3	Environmental Monitoring (One Day Monitoring) - Air 24 hrs -Rs. 27,270 - Ground Water -Rs. 18,630 - Noise 24 hrs - Rs. 21,000 Total -Rs. 66,900 (Per Season) At least two seasons in a Year -Rs. 66,900 x 2 = Rs. 1,33,800 <i>Source: CPCB Notification, New Delhi 23 Feb 2022</i>	--	1,33,800



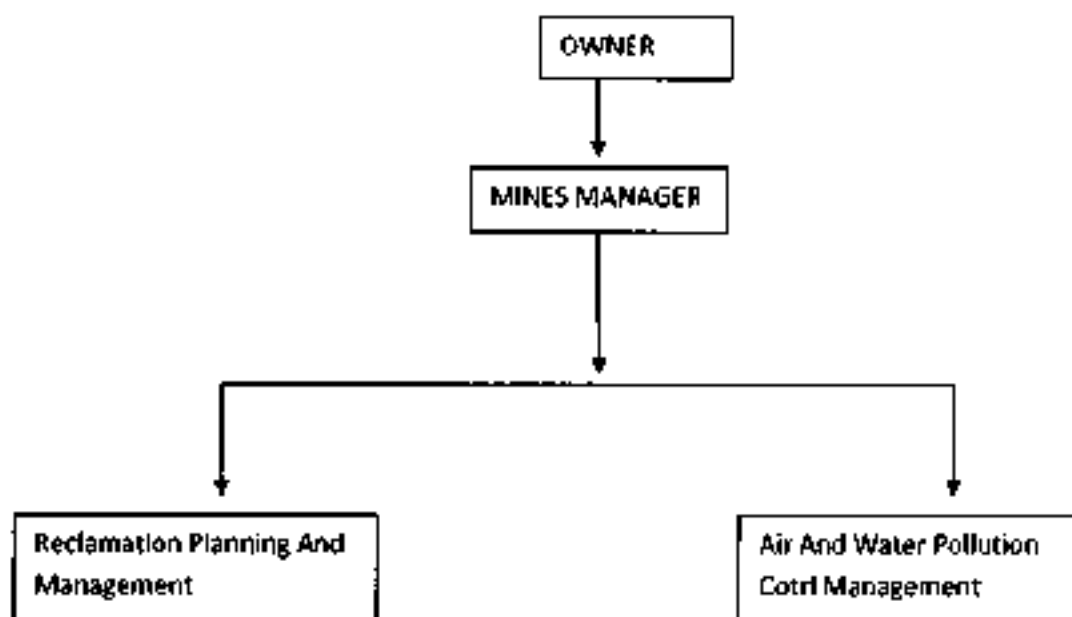





Sl. No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
Total		9,40,800	5,58,800

Environment Monitoring Programme

Sl. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Water	3 stations	6 Monthly
3.	Noise	3 stations	6 Monthly



Solid Waste Management

During first year 5,077 cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.

- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling— Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling— Water will be sprinkled on the site where drilling has to be done.

Blasting— Blasting generate gases & dust This effect would be mitigated by following measures.

- Controlled blasting would be practiced
- Optimum quantity of explosives would be used.
- Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's— They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

Loading of Product on Truck— Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road— Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on Gaur road by using water Tankers.
- ✓ Regular repair of Haul road
- ✓ All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Hazard Identification & Risk Analysis in Stone Mining operation

S. No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

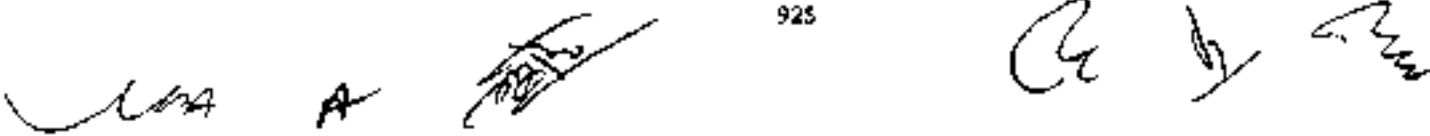
Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations

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- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

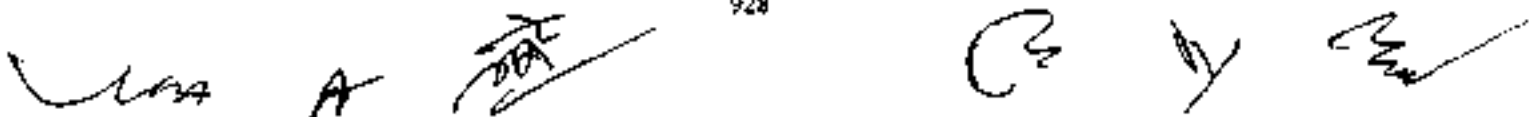
- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.

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- I. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Manjhladih Stone Mine of M/s Shristhi Stone Works (Prop. : Shri Dharmendra Kumar Singh), Village : Manjhladih, Thana no. : 06, Thana : Shikaripara, Distt. : Dumka, Jharkhand (1.81 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- I. In compliance of OMA no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nlc.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to be submitted along with 6 monthly compliance
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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6. Salbonapahar Stone Mine of Shri Hanuman Singh, Village : Salbonapahar, Thana : Shikaripara, Distt. : Dumka, Jharkhand (1.49 Ha).

(Proposal no.: SIA/JH/MIN/ 502086 /2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 25.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Terms of Reference (ToR) as per EIA notification, 2006.

TOR Application for: Proposed Capacity: 16169 Cum. / annum or 43656 TPA

Project and Location Details:

Sl	Parameter	Details	
1	Project Name	Salbonapahar Stone Mine	
2	Lessee:	Proponent:- Shri Hanuman Singh	
3	Lessee Address	Village: Salbonapahar, Thana- Shikaripara, Thana No.- 07, Dist- Dumka, Jharkhand	
4	Lease Area	1.49 Ha	
5	Type of Land	Non Forest Raiyati Land	
6	Project Cost	Capital Cost: Rs. 105.99 Lakhs	Recurring Cost: Rs. 6.92 Lakhs
7	EMP Budget	Capital Cost: Rs. 7.008 Lakhs	Recurring Cost: Rs. 5.732 Lakhs
8	New or Expansion	New	
9	Mineable Reserves	cum.: 64606 cum	Tonnes: 174435 tons
10	Mine Life	5 years.	
11	Man power	25 Person	
12	Water Requirement	5.63 KLD {Drinking: 0.375 KLD, Dust Suppression: 0.76 KLD, Plantation: 4.158 KLD}	
13	Water Source	From Nearby villages by tankers	
14	DG Set / power	60 KVA D.G. Set proposed	
15	Crusher	No crusher	
16	Nearest Water Body	Brahmani River – 7.95 Km in North direction	
17	Nearest Habitation	Salbonapahar Village –1.040 Km In SW Direction.	
18	Nearest Rail Station	Pinargaria Junction is at aerial distance of 5.26 km N direction.	

19	Nearest Air Port	:	Pinargaria Junction is at aeral distance of 5.26 km N direction.
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer NOC. letter no.- 1172 Dated- 26/04/23
21	Road & Highways	:	The distance of Approach Road is 0.19 km, after that this road connects to NH114A (Dumka-Rampurhat).

CO-ORDINATES

Point Id	Latitude	Longitude
1	24° 11' 33.18307221" N	087° 34' 04.88944951" E
2	24° 11' 33.11081489" N	087° 34' 04.60432677" E
3	24° 11' 33.03793043" N	087° 34' 03.91147499" E
4	24° 11' 32.92743596" N	087° 34' 03.11989900" E
5	24° 11' 32.71167141" N	087° 34' 02.57825970" E
6	24° 11' 32.37905633" N	087° 34' 01.99989943" E
7	24° 11' 32.02093067" N	087° 34' 01.39160996" E
8	24° 11' 31.59720866" N	087° 34' 00.75216861" E
9	24° 11' 31.33833103" N	087° 34' 00.34953794" E
10	24° 11' 30.96928715" N	087° 33' 59.72147008" E
11	24° 11' 30.73922205" N	087° 33' 58.95862051" E
12	24° 11' 30.56126798" N	087° 33' 58.40810326" E
13	24° 11' 30.45022973" N	087° 33' 57.83958458" E
14	24° 11' 30.39350804" N	087° 33' 57.14356574" E
15	24° 11' 30.27322280" N	087° 33' 56.78840548" E
16	24° 11' 30.21210275" N	087° 33' 56.28719265" E
17	24° 11' 30.22230287" N	087° 33' 55.53609928" E
18	24° 11' 30.20498975" N	087° 33' 54.58470014" E
19	24° 11' 30.14673112" N	087° 33' 53.85484209" E
20	24° 11' 30.20095354" N	087° 33' 53.32279996" E
21	24° 11' 30.85006890" N	087° 33' 53.33196099" E
22	24° 11' 31.64380057" N	087° 33' 53.34316263" E
23	24° 11' 32.35088596" N	087° 33' 53.35314267" E
24	24° 11' 33.09831956" N	087° 33' 53.36369037" E
25	24° 11' 33.84575314" N	087° 33' 53.37423813" E
26	24° 11' 33.37430022" N	087° 33' 54.38153419" E
27	24° 11' 33.05656084" N	087° 33' 55.20813143" E
28	24° 11' 32.84748772" N	087° 33' 55.41129446" E
29	24° 11' 32.86534661" N	087° 33' 55.59305946" E
30	24° 11' 32.99397307" N	087° 33' 55.85606278" E
31	24° 11' 32.01359201" N	087° 33' 56.19996896" E
32	24° 11' 31.30437924" N	087° 33' 56.43908982" E
33	24° 11' 31.05761560" N	087° 33' 56.81903878" E
34	24° 11' 30.91462316" N	087° 33' 57.30794893" E

35	24° 11' 30.97964208" N	087° 33' 57.87095867" E
36	24° 11' 31.09094576" N	087° 33' 58.44678815" E
37	24° 11' 31.25825627" N	087° 33' 58.88660015" E
38	24° 11' 31.46830517" N	087° 33' 59.67230988" E
39	24° 11' 31.61639125" N	087° 33' 59.68558289" E
40	24° 11' 31.91669695" N	087° 33' 59.85092916" E
41	24° 11' 32.26789109" N	087° 34' 00.02407534" E
42	24° 11' 32.54498115" N	087° 34' 00.20698583" E
43	24° 11' 32.79909020" N	087° 34' 00.34437431" E
44	24° 11' 32.79271400" N	087° 34' 00.80865495" E
45	24° 11' 32.67183511" N	087° 34' 01.57524194" E
46	24° 11' 32.96314439" N	087° 34' 02.28813617" E
47	24° 11' 33.08548781" N	087° 34' 02.99775982" E
48	24° 11' 33.51205275" N	087° 34' 03.05642513" E
49	24° 11' 34.40315266" N	087° 34' 03.65573789" E
50	24° 11' 35.21674684" N	087° 34' 03.70271151" E
51	24° 11' 35.79517486" N	087° 34' 03.76441789" E
52	24° 11' 35.93110479" N	087° 34' 04.64049521" E
53	24° 11' 35.75485285" N	087° 34' 04.72550896" E
54	24° 11' 35.53434127" N	087° 34' 04.89108045" E
55	24° 11' 35.24920831" N	087° 34' 05.00842084" E
56	24° 11' 35.00974562" N	087° 34' 04.66669643" E
57	24° 11' 34.57601468" N	087° 34' 04.89945455" E
58	24° 11' 34.13135257" N	087° 34' 04.96813995" E
59	24° 11' 34.05336077" N	087° 34' 04.77348895" E
60	24° 11' 33.56019395" N	087° 34' 04.81420521" E
61	24° 11' 33.18307221" N	087° 34' 04.88944951" E

LAND DETAILS

Khata no.	Plot no.
33	123 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Dumka vide letter no. 960/M, dated 16.08.2024.
2	CO	:	The CO, Shikaripara vide letter no. 131/Ra., dated 26.02.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhan" in R.S. Khatyan & Register II.








3	DMO	:	DMO, Dumka vide memo no. 1118/M, dated 01.10.2024 certified that 09 other mining lease area (3.45 Acre, 5.40 Acre, 7.27 Acre, 6.94 Acre, 3.40 Acre, 7.39 Acre, 4.01 Acre, 6.12 Acre & 4.63 Acre) exists within 500 meters radius from proposed project site and total area is 52.30 Acre
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 1190, dated 23.06.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Dumka Forest Division vide letter no. 1172, dated 26.04.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Dumka District (Sl. no. 48, Page no. 290).
7	Gram Sabha	:	Gram Sabha conducted on 19.04.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Dumka vide Letter No. 1195/M, dated 19.10.2024.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi-Mechanized Method	
2	Quarry Area	:	1.49 Ha	Life of Mine – 5 year
3	Waste Generation	:	23088 cum	
4	Stripping Ratio	:	01:06	
5	Working Days	:	300	
6	Bench: size	:	6 m x 6 m,	
7	Elevation of Mine	:	258m -260m AMSL	
8	Ground Level Elevation	:	210m AMSL	
9	Ultimate Working Depth	:	239 m AMSL	
10	Water Table	:	Post Monsoon – 228 m AMSL Pre Monsoon – 221.8 m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	16 kg/day slurry explosives	
13	Diesel/Fuel requirement	:	HSD – 246liters / day (73.8KL/year)	

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.)
1st	7452	2.7	20120	25	67	10360	35
2nd	9701	2.7	26194	32	87	12728	42
3rd	15818	2.7	42707	53	142	0	0
4th	16169	2.7	43656	54	146	0	0
5th	15466	2.7	41758	52	139	0	0
Total	64606	2.7	174435	54 (Max.)	146 (Max.)	23088	42

Land Use Pattern

Sl	Pattern	Existing Land Use (Ha)	Proposed Land Use (Ha)	Conceptual Land Use (Ha)	Area to be converted in the conceptual period.
1	Mining Activities	0.00	0.59	0.59	Water body
2	Offices/ Store etc.	0.00	0.00	0.00	Plantation
3	Dumping	0.00	0.08	0.08	Plantation
4	Garland drain	0.00	0.04	0.04	-
5	Settling Tank	0.00	0.00	0.00	-
6	Safety Zone	0.00	0.78	0.78	Plantation
7	Stone Stock yards	0.00	0.00	0.00	
8	Unutilized	1.49	0.00	0.00	
	TOTAL	1.49	1.49	1.49	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.78 Ha	1600

2	Along Approach Road	0.190 m	252
TOTAL			1248

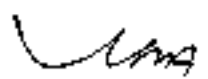
- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Budget for Environmental Management

Sl. No.	Head	Capital Cost Rs. in Lakhs	Recurring Cost Rs. in Lakhs
1.	Government Revenue (Dead Rent& Royalty)	25.00	--
2.	Cost of Infrastructure	5.0	0.5
3.	Mining Machineries owned by applicant a. Wagon Drill -01 b. Compressor-01 c. Tippers 25 tons-02 d. Diesel Pump-01 e. D.G. Set-01	57.35	--
	Mining Machineries on hired basis (Excavator- 01, Tipper-1)	--	5.5
4.	Lease Agreement(lump-sum)	--	0.92
5.	Statutory Clearance & Others	9.0	--
6.	Contingency	9.64	--
Total		105.99	6.92
Budget for Environment Management		7.008	5.732

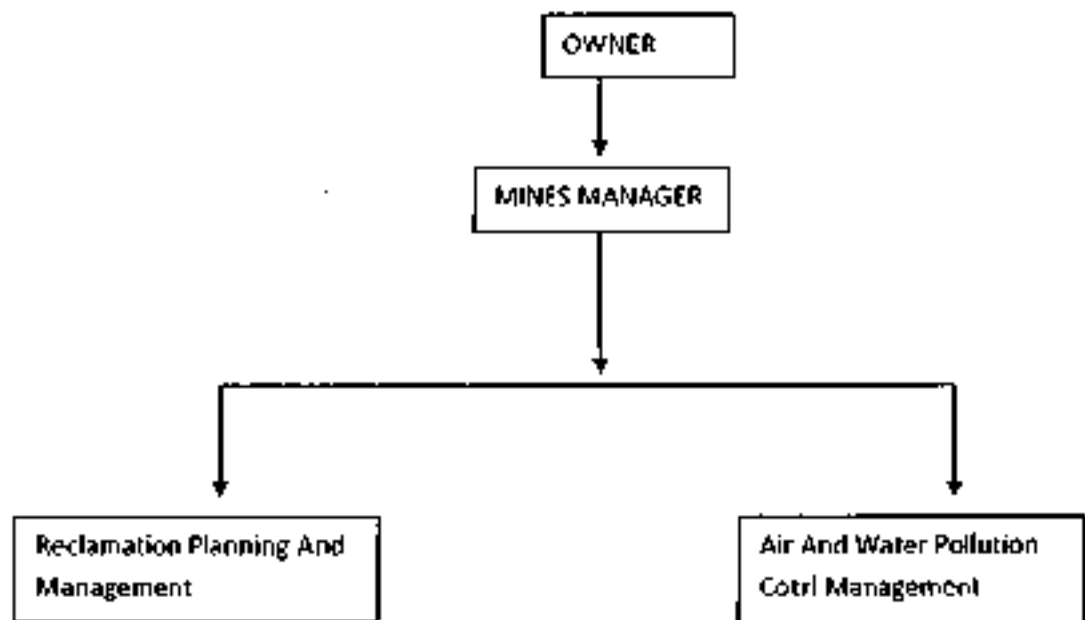
Environment Monitoring Programme

Sl. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Water	2 stations	6 Monthly
3.	Noise	3 stations	6 Monthly
4.	Soil	3 stations	6 Monthly







Solid Waste Management

During first year 10360 cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced
- Optimum quantity of explosives would be used.
- Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on Haul road by using water Tankers.
- ✓ Regular repair of Haul road
- ✓ All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Hazard Identification & Risk Analysis in Stone Mining operation

S. No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed

- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging [Regulation 106(5) of MMR 1961]

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.

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- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

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- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department.

Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidl etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

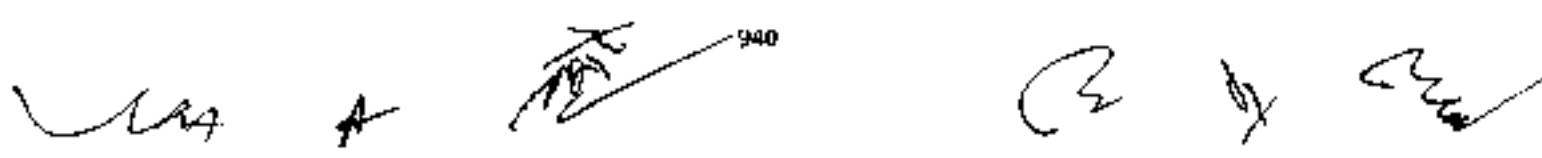
Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.

The bottom of the page features several handwritten signatures and initials in black ink. From left to right, there is a long, flowing signature, a single letter 'A', a signature with a diagonal line through it, a circled 'B', a signature with a cross-like mark, and a final signature on the right.

- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from Injury or Infection will be provided to working personnel.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 22, 23, 24, 25 & 26.10.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith following specific condition :-

- i. In compliance of OM no.F.No. IA3-22/3/2024-IA,III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).

7. Bhelatanr Stone Mine of Shri Rakesh Kumar Yadav, Village : Bhelatanr, Thana : Shikaripara, Distt. : Dumka, Jharkhand (1.71 Ha).

(Proposal no.: SIA/JH/MIN/ 501969 /2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 25.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 67,069.10 Cum. / annum or 1,81,086 TPA (max.)

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Bhelatanr Stone Mine

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2	Lessee:	:	Proponent- Mr. Rakesh Kumar Yadav	
3	Lessee Address	:	Prop- Shri Rakesh Kumar Yadav S/O Shri Anuplal Yadav Village - Aliganj, Ward No. - 13 Post - Banka Thana- Banka District- Banka State - Jharkhand	
4	Lease Area	:	1.71 Ha	
5	Type of Land	:	Non Forest Raiyati Land	
6	Project Cost	:	Capital Cost: Rs. 128.17 Lakhs	Recurring Cost: Rs. 14.55 Lakhs
7	EMP Budget	:	Capital Cost: Rs. 5.29 Lakhs	Recurring Cost: Rs. 4.52 Lakhs
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 2,77,391 cum	Tonnes: 7,48,951 tons
10	Mine Life	:	5 years.	
11	Man power	:	27 Person	
12	Water Requirement	:	3.905 KLD (Drinking: 0.405 KLD, Dust Suppression: 0.64 KLD, Plantation: 2.86 KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	D.G. Set / power	:	20 KVA D.G. Set proposed	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Brahmani River - 1.84 km - N direction	
17	Nearest Habitation	:	Shikaripara - 11 km in the NW direction	
18	Nearest Rail Station	:	Pakdaha Harinsing Railway Station is at areal distance of 1.94 km W direction.	
19	Nearest Air Port	:	Deoghar Airport is at aerial distance of 92.50 km NW direction.	
20	Nearest Forest	:	More than 250 m, as per Forest Division, Dumka Letter No. - 1061 Dated - 04/05/2024	
21	Road & Highways	:	The distance of Approach Road is 40 m, after that this road connects to NH-114A (Dumka-Rampurhat Road) at 2.63 km (aerial distance) S direction	

CO-ORDINATES

Point Name	Latitude	Longitude
1	24° 14' 29.63138531" N	087° 35' 33.91938126" E







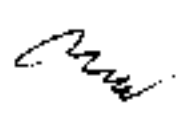

2	24° 14' 29.65492756" N	087° 35' 34.58283874" E
3	24° 14' 29.61996538" N	087° 35' 35.21375840" E
4	24° 14' 29.32773761" N	087° 35' 35.92524026" E
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11	24° 14' 26.27629749" N	087° 35' 38.17664083" E
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13	24° 14' 25.68404638" N	087° 35' 37.25439629" E
14	24° 14' 25.69421729" N	087° 35' 36.63867446" E
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19	24° 14' 26.94661988" N	087° 35' 33.27817183" E
20	24° 14' 27.40038308" N	087° 35' 33.67830178" E
21	24° 14' 27.91952896" N	087° 35' 33.39768577" E
22	24° 14' 28.20119197" N	087° 35' 33.31746837" E
23	24° 14' 29.01292822" N	087° 35' 33.56135158" E

LAND DETAILS

Khata no.	Plot no.
27 & 32	2258, 2259, 2260 (P), 2261, 2262, 2263 & 2264





STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Dumka vide letter no. 838/M, dated 19.07.2024.
2	CO	:	The CO, Shikaripara vide letter no. 463/Ra., dated 11.06.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatriyan & Register II.
3	DMO	:	DMO, Dumka vide memo no. 894/M, dated 31.07.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 1254, dated 29.06.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Dumka Forest Division vide letter no. 1061, dated 04.05.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Dumka District (Sl. no. 35, Page no. 156).
7	Gram Sabha	:	Gram Sabha conducted on 22.03.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Dumka vide Letter No. 1165/M, dated 14.10.2024.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method	
2	Quarry Area	:	1.71 Ha	Life of Mine – 5 year
3	Waste Generation	:	24,038 cum	
4	Stripping Ratio	:	10:07	
5	Working Days	:	300	
6	Bench: size	:	6 m x 6 m,	
7	Elevation of Mine	:	86 m – 76 m AMSL	
8	Ground Level Elevation	:	76 AMSL	
9	Ultimate Working	:	40 m AMSL	

	Depth		
10	Water Table	:	Post Monsoon – 26.10 m AMSL Pre Monsoon – 23.81 m AMSL
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	64.14 kg nitro mix explosives/day
13	Diesel/fuel requirement	:	HSD – 302 liters / day (90.60 KL/year)

Production Details

SUMMARY OF YEARWISE OF PRODUCTION						
Years	Production In Cum/Year	Production In Cum/Day	O.B in Cum/Year	Top Soil in Cum/Year	Production In Tons/Year	Prod. In Tons. /Day
1 st	67069.1	224	16826.60	7211.40	181086	604
2 nd	54595.6	182	0	0	147408	491
3 rd	47207.4	157	0	0	127460	425
4 th	58530	195	0	0	158030	527
5 th	49990	167	0	0	134973	450
Total	277391	224 (max.)	16826.60	7211.40	748957	604 (max.)

Land Use

Existing Land Use pattern

SL	Pattern	Existing Land Use (Ha)
1	Mining Activities	0.000
2	Offices/ Store etc.	0.000
3	Dumping	0.000
4	Garland drain	0.000
5	Settling Tank	0.000
6	Safety Zone	0.000
7	Stone Stock yards	0.000
8	Unutilized	1.71
	TOTAL	1.71

Land Use Pattern for Proposed Plan Period:

SL	Pattern	Proposed Land Use (Acres)

1	Mining Activities	2.42
2	Offices/ Store etc.	0.01
3	Dumping	0.07
4	Mining Road	0.64
5	Garland drain	0.07
6	Settling Tank	0.01
7	Safety Zone	0.00
8	Greenbelt	0.89
9	Stone Stock yards	0.00
10	Unutilized	0.12
	TOTAL	4.23

Land Use Pattern after Life of the Mine:

SL	Pattern	Conceptual Stage Land Use (Acres)	Area to be converted in the conceptual period.
1	Mining Activities	2.42	Water body
2	Offices/ Store etc.	0.01	Plantation
3	Dumping	0.07	Plantation
4	Mining Road	0.64	Water body
5	Garland drain	0.07	.
6	Settling Tank	0.01	.
7	Safety Zone	0.12	Green Belt
8	Greenbelt	0.89	Plantation
9	Stone Stock yards	0.00	
10	Unutilized	0.00	
	TOTAL	4.23	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.5643 Ha	902
2	Along Approach Road	40 m	52
TOTAL			954

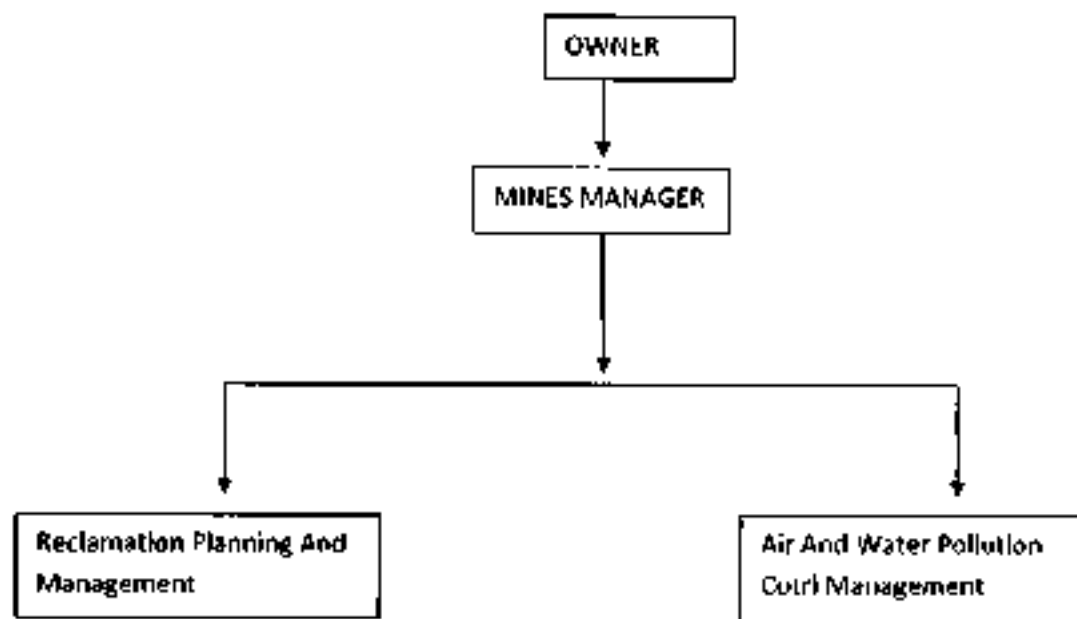
- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Budget for Environmental Management

Sl. No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. (Rs. 1000 per Tanker)	--	3,00,000
2	Plantation 52 X 1500 = Rs 78,000 (Gabion Plantation along approach road) 902 X 500 = 4,51,000 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	5,29,000	52,900
3	Environmental Monitoring (One Day Monitoring) - Ambient Air 24 hrs -Rs.32,000 - Ground Water -Rs.8,000 - Noise 24 hrs - Rs.10,000 Total -Rs. 50,000 (Per Season) At least two seasons in a Year -Rs. 50,000 x 2 = Rs. 1,00,000	--	1,00,000
Total		5,29,000	4,52,900

Environment Monitoring Programme

Sl. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Water	2 stations	6 Monthly
3.	Noise	3 stations	6 Monthly
4.	Soil	3 Station	6 Monthly



Solid Waste Management

During first year 24,038 cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced
- Optimum quantity of explosives would be used
- Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on Gaur road by using water Tankers.
- ✓ Regular repair of Haul road
- ✓ All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

The hazard Identification and risk analysis is done using qualitative method:

Hazard identification & Risk Analysis in Stone Mining operation

S. No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the

✓ *MA* *A* *205* 950 *CR* *by* *[Signature]*

drill hole continuously and discharges the same in a dust collector specially provided for the purpose.

- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.

- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.

- I. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Bhelatanr Stone Mine of Shri Rakesh Kumar Yadav, Village : Bhelatanr, Thana : Shikaripara, Distt. : Dumka, Jharkhand (1.71 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

8. **Paharpur Stone Mine of M/s Balaji Stone & Mineral Project (OPC) Pvt. Ltd., (Prop. : Shri Nayan Kumar Mandal), Village : Paharpur, Thana : Shikaripara, Distt. : Dumka, Jharkhand (2.98 Ha).**

{Proposal no.: SIA/JH/MIN/ 501921 /2024}

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 25.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 66,888.60 Cum. / annum or 1,80,599 TPA (max.)

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Paharpur Stone Mine
2	Lessee:	M/s. Sri Balaji Stone & Mineral Project (OPC) Private Limited Project Proponent: Mr. Nayan Kumar Mandal
3	Lessee Address	M/s. Sri Balaji Stone & Mineral Project (OPC) Private Limited Project Proponent - Mr. Nayan Kumar Mandal S/o Late Dulal Mandal Village - Kataliya PO - Kataliya Thana - Masaliya District - Dumka
4	Lease Area	2.98 Ha
5	Type of Land	Non Forest Rayati Land
6	Project Cost	Capital Cost: Rs. 135.94 Lakhs Recurring Cost: Rs. 15.34 Lakhs
7	EMP Budget	Capital Cost: Rs. 8.42 Lakhs Recurring Cost: Rs. 4.84 Lakhs
8	New or Expansion	New
9	Mineable Reserves	cum.: 2,82,938 cum Tonnes: 7,63,934 tons
10	Mine Life	5 years.
11	Man power	29 Person
12	Water Requirement	7.945 KLD (Drinking: 0.435 KLD, Dust Suppression: 1.68 KLD, Plantation: 5.83 KLD)
13	Water Source	From Nearby villages by tankers
14	D.G. Set / power	20 KVA D.G. Set proposed
15	Crusher	No crusher
16	Nearest Water	Brahmani River – 7.35 km – N direction

	Body		
17	Nearest Habitation	:	Haripur – 0.50 km in the NW direction
18	Nearest Rail Station	:	Pakdaha Harinsing Railway Station is at areal distance of 5.40 km NNW direction.
19	Nearest Air Port	:	Deoghar Airport is at aerial distance of 93.50 km NW direction.
20	Nearest Forest	:	More than 250 m, as per Forest Division, Dumka Letter No. 297 Dated - 08/02/2024
21	Road & Highways	:	The distance of Approach Road is 280 m, after that this road connects to NH-114A (Dumka-Rampurhat Road) at 2.90 km (aerial distance) N direction

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29	24° 11' 18.30907518" N	087° 35' 13.98800000" E
30	24° 11' 17.99873000" N	087° 35' 13.57186592" E
31	24° 11' 17.63388030" N	087° 35' 13.47895910" E
32	24° 11' 17.46446248" N	087° 35' 14.00625137" E
33	24° 11' 17.12797873" N	087° 35' 13.79182518" E
34	24° 11' 16.72790816" N	087° 35' 13.62482117" E
35	24° 11' 16.74732173" N	087° 35' 13.43918975" E
36	24° 11' 16.79054465" N	087° 35' 13.27518364" E
37	24° 11' 16.48804571" N	087° 35' 13.10910002" E
38	24° 11' 16.56579690" N	087° 35' 12.72902664" E
39	24° 11' 16.57644837" N	087° 35' 12.49197066" E
40	24° 11' 16.67589211" N	087° 35' 11.95805516" E
41	24° 11' 16.69267895" N	087° 35' 11.39191138" E
42	24° 11' 16.14729148" N	087° 35' 11.39472622" E
43	24° 11' 16.02050046" N	087° 35' 11.86481648" E
44	24° 11' 15.85354658" N	087° 35' 12.22678719" E

45	24° 11' 15.56754777" N	087° 35' 12.65390328" E
46	24° 11' 15.31756819" N	087° 35' 12.36799146" E
47	24° 11' 15.05751845" N	087° 35' 12.06268073" E
48	24° 11' 14.83752512" N	087° 35' 11.89302561" E
49	24° 11' 14.74849496" N	087° 35' 11.96173686" E
50	24° 11' 14.52298251" N	087° 35' 11.90817553" E
51	24° 11' 14.67730921" N	087° 35' 11.34763996" E
52	24° 11' 14.83177358" N	087° 35' 10.75116305" E
53	24° 11' 14.14629516" N	087° 35' 09.88410139" E
54	24° 11' 14.80727434" N	087° 35' 09.03264439" E
55	24° 11' 15.20244934" N	087° 35' 09.32901675" E
56	24° 11' 15.58027430" N	087° 35' 08.27305618" E
57	24° 11' 16.31620179" N	087° 35' 08.83512283" E
58	24° 11' 16.61911937" N	087° 35' 08.99398621" E
59	24° 11' 17.00443500" N	087° 35' 09.25231479" E
60	24° 11' 17.21145255" N	087° 35' 09.44612943" E
61	24° 11' 18.17720041" N	087° 35' 09.37301735" E
62	24° 11' 18.14997924" N	087° 35' 09.85672542" E
63	24° 11' 18.62588732" N	087° 35' 10.08837494" E
64	24° 11' 19.15209032" N	087° 35' 09.11205349" E
65	24° 11' 19.49488379" N	087° 35' 08.34501458" E
66	24° 11' 19.66453821" N	087° 35' 08.41490835" E
67	24° 11' 19.81403115" N	087° 35' 08.45153291" E
68	24° 11' 20.10294929" N	087° 35' 07.84460307" E
69	24° 11' 20.36930711" N	087° 35' 07.16845026" E
70	24° 11' 20.91374462" N	087° 35' 07.38658708" E
71	24° 11' 21.55674025" N	087° 35' 07.69641194" E

72	24° 11' 22.23463703" N	087° 35' 08.03991999" E
73	24° 11' 22.89109854" N	087° 35' 08.39283514" E
74	24° 11' 22.58659752" N	087° 35' 09.25975951" E
75	24° 11' 22.33846767" N	087° 35' 10.18275436" E
76	24° 11' 22.44438926" N	087° 35' 10.33806624" E
77	24° 11' 22.80566123" N	087° 35' 10.70190417" E
78	24° 11' 22.96016241" N	087° 35' 10.75514134" E
79	24° 11' 23.07313911" N	087° 35' 11.05425469" E
80	24° 11' 23.13279333" N	087° 35' 11.36971308" E
81	24° 11' 23.35318032" N	087° 35' 11.43707574" E
82	24° 11' 23.49988157" N	087° 35' 11.54004376" E
83	24° 11' 23.62826606" N	087° 35' 11.78946191" E
84	24° 11' 23.65030373" N	087° 35' 11.99415712" E

LAND DETAILS

Khata no.	Plot no.
06, 12, 22, 23, 24 & 32	957 (P), 1223, 1224, 1225 (P), 1227 (P), 1231, 1234, 1236 (P) & 1237 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Dumka vide letter no. 837/M, dated 19.07.2024.
2	CO	:	The CO, Shikaripara vide letter no. 140/Ra., dated 29.02.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jharl" in R.S. Khatlyan & Register II.
3	DMO	:	DMO, Dumka vide memo no. 180/M, dated 16.02.2024 certified that 01 other mining lease area (3.43 Acre) exists within 500 meters radius from proposed project site and total area is 10.80 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 334, dated

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5	DFO Territorial	22.04.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
6	OSR	Division Forest Officer, Dumka Forest Division vide letter no. 297, dated 08.02.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
7	Gram Sabha	Gram Sabha conducted on 02.02.2024.
8	Mine Plan Approval	Approved by District Mining Officer, Dumka vide Letter No. 1135/M, dated 07.10.2024.
9	Qualified Person	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method	
2	Quarry Area	:	2.98 Ha	Life of Mine – 5 year
3	Waste Generation	:	48,230 cum	
4	Stripping Ratio	:	10:07	
5	Working Days	:	300	
6	Bench: size	:	6 m x 6 m,	
7	Elevation of Mine	:	123 m – 112 m AMSL	
8	Ground Level Elevation	:	112 AMSL	
9	Ultimate Working Depth	:	84 m AMSL	
10	Water Table	:	Post Monsoon – 72.10 m AMSL	Pre Monsoon – 68.81 m AMSL
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	65.80 kg nitro mix explosives/day	
13	Diesel/Fuel requirement	:	HSD – 302 liters / day (90.60 KL/year)	

Production Details

SUMMARY OF YEARWISE OF PRODUCTION						
Years	Production in Cum/Year	Production in Cum/Day	O.B. in Cum/Year	Top Soil in Cum/Year	Production in Tons/Year	Prod. in Tons. /Day
1 st	49269.90	164	17920	7680	133029	443








2 nd	52486.60	175	15841	6789	141714	472
3 rd	66888.60	223	0	0	180599	602
4 th	61557	205	0	0	166204	554
5 th	52736	176	0	0	142388	475
Total	282938	223 (max.)	33761	14469	763934	602 (max.)

Land Use

Existing Land Use pattern

SL	Pattern	Existing Land Use (Ha)
1	Mining Activities	0.000
2	Offices/ Store etc.	0.000
3	Dumping	0.000
4	Garland drain	0.000
5	Settling Tank	0.000
6	Safety Zone	0.000
7	Stone Stock yards	0.000
8	Unutilized	2.98
	TOTAL	2.98

Land Use Pattern for Proposed Plan Period:

SL	Pattern	Proposed Land Use (Acres)
1	Mining Activities	4.12
2	Offices/ Store etc	0.01
3	Dumping	0.11
4	Mining Road	0.48
5	Garland drain	0.15
6	Settling Tank	0.07
7	Safety Zone	0.00
8	Greenbelt	2.08








9	Stone Stock yards	0.00
10	Unutilized	0.35
	TOTAL	7.37

Land Use Pattern after Life of the Mine:

SL	Pattern	Conceptual Stage Land Use (Acres)	Area to be converted in the conceptual period.
1	Mining Activities	4.12	Water body
2	Offices/ Store etc.	0.01	Plantation
3	Dumping	0.11	Plantation -
4	Mining Road	0.48	Water body
5	Garland drain	0.25	-
6	Settling Tank	0.07	-
7	Safety Zone	0.35	Green Belt
8	Greenbelt	2.08	Plantation
9	Stone Stock yards	0.00	
10	Unutilized	0.00	
	TOTAL	7.37	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.9834 Ha	1573
2	Along Approach Road	280 m	372
TOTAL			1945

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be

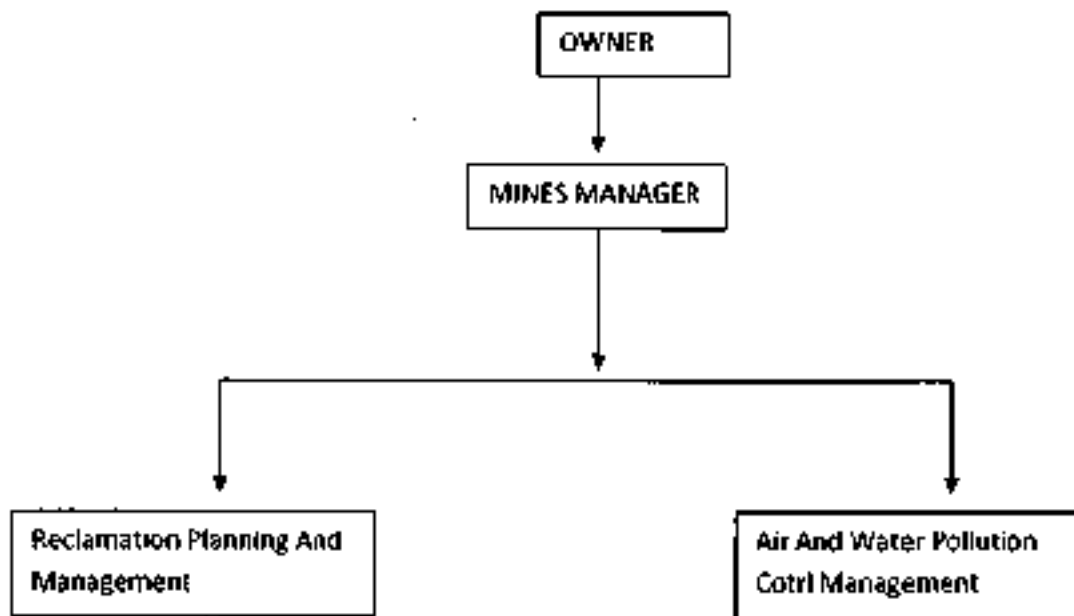
undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Budget for Environmental Management

Sl. No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. (Rs. 1000 per Tanker)	--	3,00,000
2	Plantation 372 X 1500 = Rs 5,58,000 (Gabion Plantation along approach road) 1573 X 500 = 7,86,500 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	8,42,300	84,230
3	Environmental Monitoring (One Day Monitoring) • Ambient Air 24 hrs -Rs.32,000 • Ground Water -Rs.8,000 • Noise 24 hrs - Rs.10,000 Total -Rs. 50,000 (Per Season) At least two seasons in a Year -Rs. 50,000 x 2 = Rs. 1,00,000	--	1,00,000
Total		8,42,300	4,84,230

Environment Monitoring Programme

Sl. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Water	2 stations	6 Monthly
3.	Noise	3 stations	6 Monthly
4.	Soil	3 Station	6 Monthly



Solid Waste Management

During first year 24,038 cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced
- Optimum quantity of explosives would be used.
- Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

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Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on Haul road by using water Tankers.
- ✓ Regular repair of Haul road
- ✓ All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Hazard Identification & Risk Analysis in Stone Mining operation

S. No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily Injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed

- ♦ No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961)
- ♦ No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- ♦ Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.

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- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the

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weight of explosive suitable for good fragmentation and the continuity of the Initiator are but a few of the steps necessary to ensure its safe use.

- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area,

utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

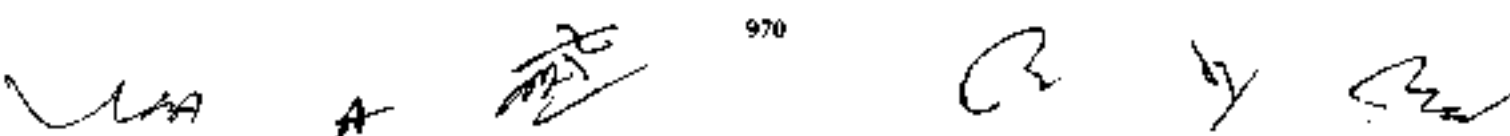
Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.

- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Paharpur Stone Mine of M/s Balaji Stone & Mineral Project (OPC) Pvt. Ltd., (Prop. : Shri Nayan Kumar Mandal), Village : Paharpur, Thana : Shikaripara, Distt. : Dumka, Jharkhand (2.98 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.



9. Aamchuwan Stone Mine of Shri Shiv Kumar Baskey, Village : Aamchuwan, Thana : Shikaripara, Distt. : Dumka, Jharkhand (2.77 Ha).

(Proposal no.: SIA/JH/MIN/ 502064 /2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 25.10.2024.

Project Sector: 1[a] Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 82,099 Cum. / annum or 2,21,667 TPA

Project and Location Details:

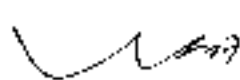
Sl	Parameter	Details
1	Project Name	Aamchuwan Stone Mine
2	Lessee	Proponent- Shri Shiv Kumar Baskey
3	Lessee Address	S/O Late Bhatal Baskey Vill - Mankapanar, P.O - Nerhagan, Thana - Jaria, Dist - Dumka (814110) Jharkhand
4	Lease Area	: 2.77 Ha
5	Type of Land	: Non Forest Rayat Land
6	Project Cost	Capital Cost: Rs. 132.39 Lakhs Recurring Cost: Rs. 37.71 Lakhs
7	LMF Budget	Capital Cost: Rs. 6.828 Lakhs Recurring Cost: Rs. 5.715 Lakhs
8	New or Expansion	: New
9	Mineable Reserves	: cum - 394358 cum Tonnes: 1554767 tons
10	Mine Life	: 5 years.
11	Man power	: 30 Person
12	Water Requirement	: 6.54 KLD (Drinking: 0.45 KLD, Dust Suppression: 2.74 KLD, Plantation: 3.45 KLD)

A

13	Water Source	from nearby villages by tankers
14	DG Set / power	50 KVA D.G. Set proposed
15	Crusher	No crusher
16	Nearest Water Body	Brahmani river at 4.16 km North direction
17	Nearest Habitation	Aamichuan Village - 0.390 Km in SW Direction.
18	Nearest Rail Station	Pinargaria Railway Station at areal distance of 4.30 km in NL direction
19	Nearest Air Port	Dadigar Airport is at areal distance of 98 km NW direction.
20	Nearest Forest	More than 250 m. as per Division Forest Officer NOC letter no.- 3777 Dated- 18/12/2023
21	Road & Highways	The distance of Approach Road is 0.28 Km, after that this road connects to village road. The village road continues for 3.8 km and after this the road connects to MDR Saraydangal to Salyanour

CO-ORDINATES

Point ID	Latitude	Longitude
1	24° 10' 42.67235532" N	087° 37' 03.62848785" E
2	24° 10' 43.10010875" N	087° 37' 04.28744117" E
3	24° 10' 43.61949625" N	087° 37' 04.82361132" E
4	24° 10' 44.24377106" N	087° 37' 05.52898662" E
5	24° 10' 44.41385324" N	087° 37' 05.66522707" E
6	24° 10' 43.82507285" N	087° 37' 06.49423540" E
7	24° 10' 43.36718769" N	087° 37' 07.06493374" E
8	24° 10' 42.97132360" N	087° 37' 07.79030285" E



A







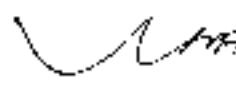
2/2/24

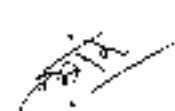
9	24° 10' 43.48306130" N	087° 37' 08.76014164" E
10	24° 10' 44.11568653" N	087° 37' 08.57907733" E
11	24° 10' 44.82739764" N	087° 37' 08.06992658" E
12	24° 10' 45.70497452" N	087° 37' 09.36791460" E
13	24° 10' 45.50302099" N	087° 37' 09.48191071" E
14	24° 10' 45.18324384" N	087° 37' 08.90613690" E
15	24° 10' 45.15598271" N	087° 37' 09.00817240" E
16	24° 10' 43.09857136" N	087° 37' 09.95180975" E
17	24° 10' 42.55674982" N	087° 37' 10.41286030" E
18	24° 10' 42.26157472" N	087° 37' 10.70362896" E
19	24° 10' 41.57405284" N	087° 37' 11.75206913" E
20	24° 10' 41.06777867" N	087° 37' 12.20845164" E
21	24° 10' 41.83526509" N	087° 37' 12.90675911" E
22	24° 10' 41.21537497" N	087° 37' 13.57546223" E
23	24° 10' 40.66889218" N	087° 37' 14.23099029" E
24	24° 10' 40.37728535" N	087° 37' 13.96415416" E
25	24° 10' 39.83429621" N	087° 37' 13.21346659" E
26	24° 10' 40.40906560" N	087° 37' 12.57812103" E
27	24° 10' 39.60576293" N	087° 37' 11.64420584" E
28	24° 10' 39.54033518" N	087° 37' 11.55385543" E
29	24° 10' 39.13250597" N	087° 37' 10.81662024" E

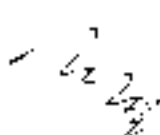
30	24° 10' 38.463933899" N	087° 37' 09.84146604" E
31	24° 10' 37.77911340" N	087° 37' 09.07570037" E
32	24° 10' 38.24010685" N	087° 37' 08.44131337" E
33	24° 10' 38.74470280" N	087° 37' 07.98279178" E
34	24° 10' 39.73855911" N	087° 37' 07.51060422" E
35	24° 10' 39.64593174" N	087° 37' 06.98105154" E
36	24° 10' 39.84899470" N	087° 37' 06.56151930" E
37	24° 10' 40.67783227" N	087° 37' 05.90605704" E
38	24° 10' 41.22213709" N	087° 37' 05.17243009" E
39	24° 10' 41.78313877" N	087° 37' 05.26880662" E
40	24° 10' 41.13179046" N	087° 37' 04.93861287" E
41	24° 10' 41.98677675" N	087° 37' 04.23745403" E

(LAND DETAILS)

Khata no.	Plot no.
10	64
01	65, 68, 69 / 70, 71, 116, 117, 118, 119, 129 & 131
30	72, 123 & 126
51	73, 124 & 125
71	77
36	120 & 128
27	121, 122 & 127 / 10;





STATUTORY CLEARANCES

1. LOI/Lease deed : The Letter of Intent (LOI) has been issued by District Mining Officer, Dumka vide letter no. 924/M, dated 08.08.2024.
2. CO : The CO, Shikaripara vide letter no. 186/Ra, dated 15.03.2024 has mentioned the plot no. of the project is not recorded as "Jungle land" in R.S. Chattran & Register II.
3. DMO : DMO, Dumka vide memo no. 956/M, dated 14.08.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4. DFO Wildlife : DFO, Wildlife Division, Hazaribag vide letter no. 901, dated 17.05.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5. DFO Terrestrial : Division Forest Officer, Dumka Forest Division vide letter no. 371, dated 18.12.2023, certified that the distance of reserved protected forest is more than 250 meters from proposed project site.
6. DSE : This project is mentioned in approved DSE of Dumka District (SI no. 39, Page no. 1571).
7. Gram Sabha : Gram Sabha conducted on 24.11.2023.
8. Mine Plan Approval : Approved by District Mining Officer, Dumka vide Letter No. 1166/M, dated 14.10.2024.
9. Qualified Person : Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1. Mining Method : Opencast/Semi-Mechanized Method
2. Quarry Area : 2.77 ha Life of Mine : 5 year
3. Waste Generation : 52554 cum
4. Stripping Ratio : 07.06
5. Working Days : 300
6. Benchest size : 1.5 m x 3 m
7. Elevation of Mine : 92m - 92m AMSL

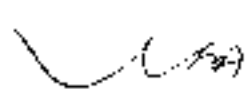
8	Ground Level Elevation	: 52 AMSL
	Ultimate Working Depth	: 35 m AMSL
10	Water Table	: Post Monsoon – 47.4 m AMSL Pre Monsoon – 38.8 m AMSL
11	Topography of Mine Area	: Area represents gently sloping land
	Explosive Requirement	: 79 kg Sundry explosives/day
13	Diesel/Fuel requirement	: 450 – 426 liters / day (127.8 KL/year)

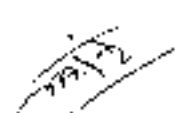
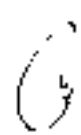
Production Details

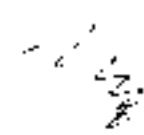
Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum	T.C.	Tonnes	Cum	Tonnes	Cum	Production per day cum O.B.
1st	68792	2.7	185742	229	619	51554	172
2nd	80684	2.7	217845	269	726	0	0
3rd	82099	2.7	221667	274	739	0	0
4th	81391	2.7	219756	271	733	0	0
5th	81391	2.7	219756	271	733	0	0
Total	394358	2.7	1064767	274 (Max.)	739 (Max.)	51554	172

Land Use pattern

Sl	Pattern	Existing Land Use (Ha)	Proposed Land Use (Ha)	Conceptual Land Use (Ha)	Area to be converted in the conceptual period.
1	Mining Activities	0.000	1.907	1.907	Water body





2	Offices/ Store etc	0.000	0.008	0.008	Plantation
3	Dumping	0.000	0.141	0.141	Plantation
4	Mining Road	0.000	0.040	0.040	Water body
5	Garland drain	0.000	0.040	0.040	
6	Settling Tank	0.000	0.012	0.012	
7	Safety Zone	0.000	0.602	0.602	Plantation
8	Stone Stock yards	0.000	0.000	0.000	
9	Utilized	2.51	0.000	0.000	
TOTAL		2.51	2.51	2.51	

ENVIRONMENT MANAGEMENT

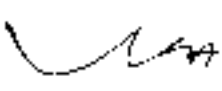
Green Belt Development

S. No	Location	Area/Length	No of Trees
1	Safety Zone	0.602 Ha	963
2	Along Approach Road	0.285m	372
TOTAL			1149

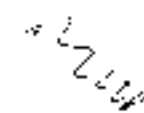
- Gab on Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering, shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Budget for Environmental Management

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. (Rs. 1000 per tanker)		3,00,000





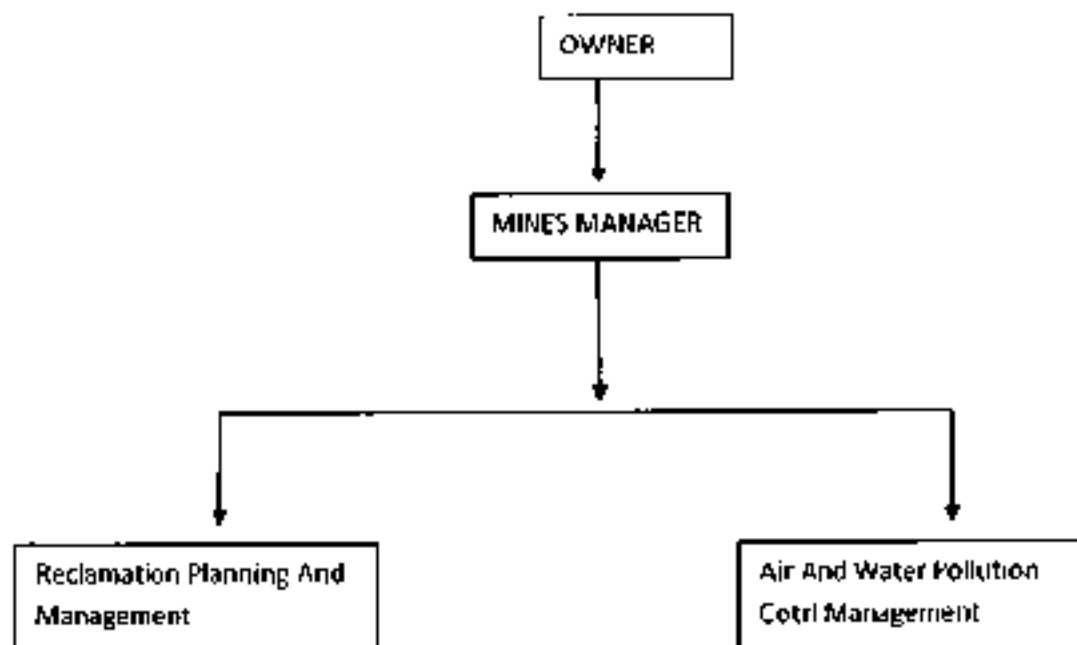



Sl.No.	Particulars	Capital Cost In Rs.	Recurring Cost in Rs. per year
2	Plantation 372 X 800 = Rs 2,97,600 (Gasien Plantation along approach road) 363 X 400 = 3,85,200 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	6,82,800	68,280
3	Environmental Monitoring (One Day Monitoring): - Ambient Air 24 hrs (3 point) Rs 77,270 - Ground Water (2 point) Rs.12,420 - Noise 24 hrs (2 point) Rs 21,000 - Soil (3 point) -Rs.40,920 Total -Rs. 1,01,610 (Per Season) At least two seasons in a Year -Rs. 1,01,610 x 2 = Rs. 2,03,220	--	2,03,220
Source: Central Pollution Control Board Notification New Delhi, the 23rd February, 2022			
Total		6,82,800	5,71,500

Environment Monitoring Programme :

SL. No.	Description	No. Of Monitoring Stations	Duration
1	Air	3 stations	6 Monthly
2	Water	2 stations	6 Monthly
3	Noise	3 stations	6 Monthly
4	Soil	3 stations	6 Monthly

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Solid Waste Management

During first year 21550 cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced
- Optimum quantity of explosives would be used.
- Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on Haul road by using water Tankers.
- ✓ Regular repair of Haul road
- ✓ All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Hazard Identification & Risk Analysis in Stone Mining operation

S. No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face Instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed

- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

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Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.

- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.

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- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- The Boundary Pillars of the proposed mine lease area will be maintained properly.
- One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- If any tree felling than necessary permission shall be taken from the competent authority.
- Slope of the Water bodies to be stabilized using gablon plantation created at the end of life of the mine.
- Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Aamchuwan Stone Mine of Shri Shiv Kumar Baskey, Village : Aamchuwan, Thana : Shikaripara, Distt. : Dumka, Jharkhand (2.77 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and

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the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).

- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

10. Pokharia Stone Mine of Shri Om Prakash Sharma, Village : Pokharia, P.O. : Benagaria, P.S. : Shikaripara, Distt. : Dumka, Jharkhand (1.26 Ha).

(Proposal no.: SIA/JH/MIN/ 501051 /2024)

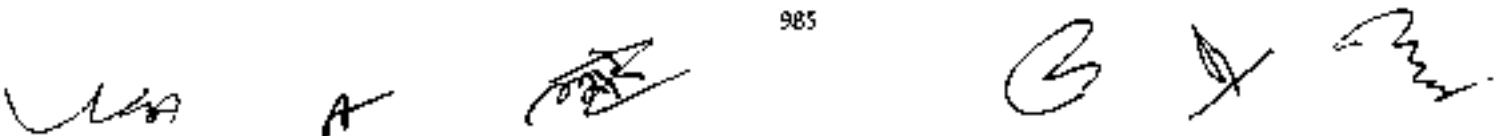
Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 25.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

The cluster certificate issued by DMO, Dumka vide letter no. 302/M, dated 25.02.2020 has been submitted.



Project Authorities are required to submit cluster certificate from DMO, Dumka of a current date to ascertain the project cluster status.

Project will be taken up for consideration after submission of fresh cluster certificate from DMO, Dumka.

11. Barmasia Stone Mine of Md. Abdul Minnan Ansari, Village : Barmasia, Thana : Shikaripara, Distt. : Dumka, Jharkhand (1.66 Ha).

{Proposal no.: SIA/JH/MIN/ 501076 /2024}

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 25.10.2024.

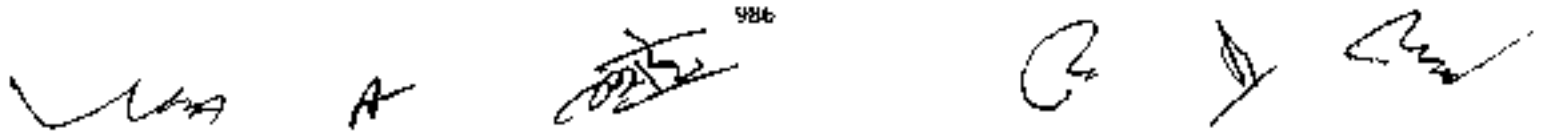
Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

Environmental Clearance Application for: Proposed Capacity- 39,129 cum/annum or 1,05,648 TPA

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Barmasia Stone Mine Project Type – Stone Mine
2	Lessee:	: Md. Abdul Minnan Ansari
3	Lessee Address	: Village: Barmasia, Thana- Shikaripara, Thana No – 02, District- Dumka, State- Jharkhand
4	Lease Area	: 1.66 Ha.
5	Type of Land	: Non Forest Relyati Land
6	Project Cost	Capital: 126.89 Lakhs Recurring: 17.02 Lakhs per year
7	EMP Budget	Capital: 7.71 Lakhs Recurring: 5.80 Lakhs per year
8	New or Expansion	: New
9	Mineable Reserves	: cum.: 185292 cum Tonnes: 500288 Tonnes
10	Mine Life	: 5 years.



11	Man power	:	31 Person
12	Water Requirement	:	6.99 KLD (Drinking: 0.47 KLD, Dust Suppression: 2.12 KLD, Plantation: 4.4 KLD)
13	Water Source	:	From Nearby villages by tankers
14	DG Set / power	:	60 KVA D G. Set proposed
15	Crusher	:	No crusher
16	Nearest Water Body	:	Mayurakshi River – 30.0 km – WS direction (areal distance).
17	Nearest Habitation	:	Barmasia Village
18	Nearest Rail Station	:	Pinargaria Railway Station is at areal distance of 2.0 km North-East direction.
19	Nearest Air Port	:	Deoghar Airport is at areal distance of 98 km NW direction.
20	Nearest Forest	:	DFO (Dumka), letter no.- 408 Dated: 11/02/2023 certified that the distance of reserved / protected forest is more than 250 m from proposed project site.
21	Road & Highways	:	NH-114A (Dumka-Rampurhat road), at 1.30 km North Direction

CO-ORDINATES

1	Latitude	From N 24°11'44.972"	To N 24°11'50.623"
2	Longitude	From E 87°37'43.873"	To E 87°37'44.718"

LAND DETAILS

Khata no.	Plot no.
28	1814 & 1815
29	1822 & 1823
34	1813, 1816 & 1818
35	1824 & 1825

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Dumka vide letter no. 276/M, dated 12.03.2024.
2	CO	:	The CO, Shikaripara vide letter no. 108/Ra., dated 03.02.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jharl" in R.S. Khatliyan & Register II.
3	DMO	:	DMO, Dumka vide memo no. 230/M, dated 15.02.2023 certified

		that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	DFO, Wildlife Division, Hazarihag vide letter no. 413, dated 27.02.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	Division Forest Officer, Dumka Forest Division vide letter no. 408, dated 11.02.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	This project is mentioned in approved DSR of Dumka District (Page no. 149, Sl. No. 07).
7	Gram Sabha	Gram Sabha conducted on 15.12.2022.
8	Mine Plan Approval	Approved by District Mining Officer, Dumka vide Letter No. 668/M, dated 07.06.2024.
9	Qualified Person	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	: Opencast Mechanized Method
2	Quarry Area	: 0.899 Ha. (During plan period) Life of Mine – 5 year
3	Waste Generation	: 6,817 cum. O.B (During plan period)
4	Stripping Ratio	: 1:23.5 or 0.04
5	Working Days	: 300
6	Bench: size	: 5 m x 5 m
7	Elevation of Mine	: 87 to 84 m AMSL
8	Ground Level Elevation	: 87 m AMSL
9	Ultimate Working Depth	: 32 m
10	Water Table	: (During pre-monsoon 39 m AMSL) (During post-monsoon 44 m AMSL)
11	Topography of Mine	: Area represents gently sloping land.
12	Explosive Requirement	: 40 kg Slurry explosives/day
13	Diesel/Fuel requirement	: HSD – 316 liters / day (94.8 KL/year)

Production Details

Years	Production In Cum/Year	Production In Cum/Day	O.B in Cum/Year	Production In Tons/Year	Prod. In Tons. /Day
1 st	39129	130	6817	105648	352
2 nd	12810	43	0.0	34587	115
3 rd	35443	118	0.0	95696	319
4 th	35187	117	0.0	95005	317
5 th	37623	125	0.0	101582	339
Total	160192	130 Max.	6817	432518	352 Max.

LAND USE

Existing, Proposed & Conceptual Land Use

SL	Pattern	Existing Land Use (Ha)	Proposed Land Use (Ha)	Conceptual Land Use (Ha)	Area to be converted in the conceptual period.
1	Mining Activities	0.352	0.899	0.899	Water body
2	Offices/ Store etc.	0.00	0.004	0.004	Greenbelt
3	Mining Road	0.00	0.008	0.008	Water body
4	Garland drain	0.00	0.020	0.020	--
5	Settling Tank	0.00	0.012	0.012	--
6	Safety Zone	0.00	0.55	0.55	Greenbelt
7	Unutilized	1.304	0.166	0.166	Greenbelt
	TOTAL	1.66	1.66	1.66	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No	Location	Area/Length	No of Trees
1	Safety Zone	0.55 Ha	880
2	Along Approach Road	0.395 km	524
TOTAL			1,404

- Gablon Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation.








Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

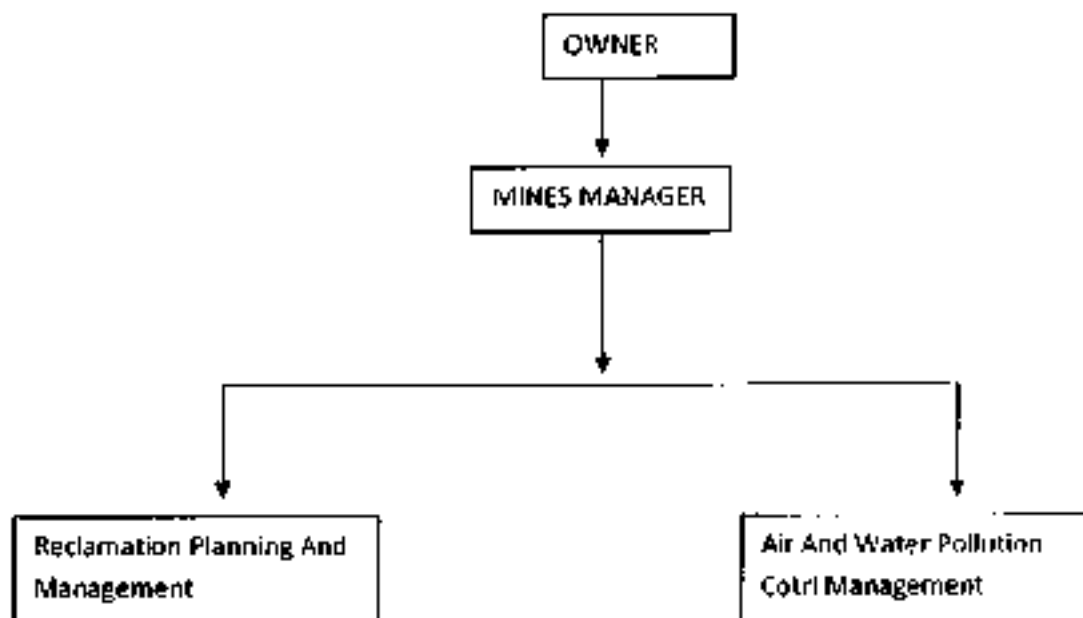
EMP BUDGET

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. (Rs. 1000 per Tanker)	----	3,00,000
2	Plantation 524 X 800 = Rs 4,19,200 (Gabion Plantation along approach road) 880 X 400 = 3,52,000 (Plantation within lease area) (also Includes Fertilizer, Pesticides, Maintenance)	7,71,200	77,120
3	Environmental Monitoring (One Day Monitoring) - Ambient Air 24 hrs (3 point) - Rs.27,270 - Ground Water (2 point) - Rs.12,420 - Noise 24 hrs (3 point) - Rs.21,000 - Soil (3 point) -Rs.40,920 Total -Rs. 1,01,610 (Per Season) At least two seasons in a Year -Rs.1,01,610 x2 = Rs. 2,03,220 Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022	----	2,03,220
Total		7,71,200	5,80,340

Environment Monitoring Programme

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	One Day Monitoring (within 6 months)

2.	Water	2 stations	One Day Monitoring (within 6 months)
3.	Soil	3 stations	One Day Monitoring (within 6 months)
4.	Noise	3 stations	One Day Monitoring (within 6 months)



Solid Waste Management

6,817 cum. O.B shall be generated during the plan period which shall be backfilled within the exhausted quarry.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling— Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

[Handwritten signatures and initials: UGA, A, JST, B, and others]

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced
- Optimum quantity of explosives would be used.
- Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on Gaurd road by using water Tankers.
- ✓ Regular repair of Haul road
- ✓ All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Hazard Identification & Risk Analysis in Stone Mining operation

S. No.	Activity	Hazard	Probablility	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department.

Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)

- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- The Boundary Pillars of the proposed mine lease area will be maintained properly.
- One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.

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- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Barmasia Stone Mine of Md. Abdul Mannan Ansari, Village : Barmasia, Thana : Shikaripara, Distt. : Dumka, Jharkhand (1.66 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests .

- Summary findings of same to be submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

12. Rambani Stone Mine of M/s Individual Proprietorship (Prop. : Shri Ramrup Bhagat), Village : Rambani, Thana : Gopikandar, Distt. : Dumka, Jharkhand (2.73 Ha).

(Proposal no.: SIA/JH/MIN/ 502021 /2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 25.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 84565.2 Cum. / annum or 228326 TPA

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Rambani Stone Mine
2	Lessee:	: Individual Proprietorship Proprietor- Shri Ramrup Bhagat
3	Lessee Address	: S/O Late Baijanath Bhagat, R/o Village- Ramabani, Thana –Gopikandar ,Thana No. - 35 District-Dumka, Jharkhand
4	Lease Area	: 2.73 Ha
5	Type of Land	: Non Forest Raiyati Land
6	Project Cost	Capital Cost: Rs. 131.28 Lakhs Recurring Cost: Rs. 17.68 Lakhs
7	EMP Budget	Capital Cost: Rs. 7.264 Lakhs Recurring Cost: Rs 6.058 Lakhs
8	New or Expansion	: New
9	Mineable	: cum.: 485494 Tonnes : 1310834

	Reserves		
10	Mine Life	:	5 years.
11	Man power	:	25 Person
12	Water Requirement	:	5.12 KLD (Drinking: 0.375 KLD, Dust Suppression: 1.4 KLD, Plantation: 3.342 KLD)
13	Water Source	:	From Nearby villages by tankers
14	DG Set / power	:	60 KVA D.G. Set proposed
15	Crusher	:	No crusher
16	Nearest Water Body	:	Bansloi River – 8.40 km North East Direction
17	Nearest Habitation	:	Ramabani Village – 0.500 Km in West direction
18	Nearest Rail Station	:	Pakdaha Harinsing Railway Station is at areal distance of 23.60 km South -East direction
19	Nearest Air Port	:	Deoghar Airport is at areal distance of 83.90 km W direction.
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer NOC. letter no.- 1060 Dated- 12/04/2021
21	Road & Highways	:	A well motorable road is connected to the mine site at a distance of 350 m South - West direction, this road connects to a village road, after 3.60 km it is connected to SH 18 (Dumka – Sahibganj), from the mine site.

CO-ORDINATES

Point Name	Latitude	Longitude
1	24° 26' 54.04062171" N	087° 31' 45.73680061" E
2	24° 26' 54.31607445" N	087° 31' 45.23108045" E
3	24° 26' 54.61120691" N	087° 31' 45.39523696" E
4	24° 26' 54.77492684" N	087° 31' 45.56626971" E
5	24° 26' 55.05597938" N	087° 31' 45.71088898" E
6	24° 26' 55.49802319" N	087° 31' 44.74494140" E
7	24° 26' 55.61535581" N	087° 31' 44.22922363" E
8	24° 26' 55.97161037" N	087° 31' 44.38759537" E
9	24° 26' 56.25277206" N	087° 31' 44.04356523" E
10	24° 26' 56.46397077" N	087° 31' 43.70259119" E
11	24° 26' 56.70409333" N	087° 31' 43.12138545" E

12	24° 26' 56.57857472" N	087° 31' 43.01769616" E
13	24° 26' 55.74290374" N	087° 31' 42.54543781" E
14	24° 26' 56.03843826" N	087° 31' 42.25123080" E
15	24° 26' 56.29522305" N	087° 31' 41.90866080" E
16	24° 26' 56.74567820" N	087° 31' 41.32243087" E
17	24° 26' 57.12561758" N	087° 31' 40.77113130" E
18	24° 26' 57.22090257" N	087° 31' 40.40439866" E
19	24° 26' 57.08916261" N	087° 31' 40.20575181" E
20	24° 26' 57.65115855" N	087° 31' 39.70957128" E
21	24° 26' 58.25587857" N	087° 31' 39.87134021" E
22	24° 26' 58.46851665" N	087° 31' 40.01769901" E
23	24° 26' 59.09952054" N	087° 31' 40.46537069" E
24	24° 26' 59.38097614" N	087° 31' 40.64077230" E
25	24° 26' 59.76962750" N	087° 31' 42.29795932" E
26	24° 27' 00.15827887" N	087° 31' 43.95514633" E
27	24° 26' 59.05659298" N	087° 31' 45.82319748" E
28	24° 26' 57.64017308" N	087° 31' 47.06908228" E
29	24° 26' 56.22375319" N	087° 31' 48.31496708" E
30	24° 26' 55.82666366" N	087° 31' 48.20510752" E
31	24° 26' 55.09145204" N	087° 31' 48.23828810" E
32	24° 26' 54.05586891" N	087° 31' 48.41641538" E
33	24° 26' 53.42397111" N	087° 31' 48.78985399" E
34	24° 26' 52.94337672" N	087° 31' 49.05138675" E
35	24° 26' 52.92214115" N	087° 31' 48.42996702" E
36	24° 26' 53.05402519" N	087° 31' 48.14719869" E
37	24° 26' 52.89891863" N	087° 31' 47.54018438" E
38	24° 26' 52.90284329" N	087° 31' 47.14002934" E

WGA

A

08/13

B

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Amey

39	24° 26' 53.32356174" N	087° 31' 47.03935931" E
40	24° 26' 53.39184060" N	087° 31' 46.69570077" E
41	24° 26' 53.52133404" N	087° 31' 46.32645541" E
42	24° 26' 53.67946410" N	087° 31' 46.07077586" E
43	24° 26' 53.83864827" N	087° 31' 45.93188916" E

LAND DETAILS

Khata no.	Plot no.
04	60 (P)
09	55 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	The Letter of Intent (LOI) has been issued by District Mining Officer, Dumka vide letter no. 758/M, dated 31.05.2021.
2	CO	The CO, Gopikandar vide letter no. 219/Ra., dated 23.04.2021 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyon & Register II.
3	DMO	DMO, Dumka vide memo no. 1171/M, dated 02.09.2023 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	DFO, Wildlife Division, Hazaribag vide letter no. 2582, dated 19.10.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	Division Forest Officer, Dumka Forest Division vide letter no. 1060, dated 13.04.2021 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	This project is mentioned in approved DSR of Dumka District (Sl. no. 06, Page no. 149).
7	Gram Sabha	Gram Sabha conducted on 31.03.2021.
8	Mine Plan Approval	Approved by District Mining Officer, Dumka vide Letter No. 1156/M, dated 09.10.2024.

9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi-Mechanized Method	
2	Quarry Area	:	2.73 Ha	Life of Mine – 5year
3	Waste Generation	:	62580 cum	
4	Stripping Ratio	:	01:03	
5	Working Days	:	300	
6	Bench size	:	6 m x 6 m,	
7	Elevation of Mine	:	180m – 185m AMSL	
8	Ground Level Elevation	:	130m-133m AMSL	
9	Ultimate Working Depth	:	152 m AMSL	
10	Water Table	:	Post Monsoon – 140 m AMSL Pre Monsoon – 135.8 m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	80 kg Slurry explosives/day	
13	Diesel/Fuel requirement	:	HSD –315 liters / day (94.5 KL/year)	

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.)
1st	84565.2	2.7	228326	282	761	41677	139
2nd	78857.6	2.7	212916	263	710	0	0
3rd	68901.6	2.7	186034	230	620	0	0
4th	62217	2.7	167987	207	560	20903	70
5th	53218	2.7	143689	177	479	0	0
Total	347760	2.7	938952	282 (max)	761 (max)	62580	209

Land Use

Existing Land Use pattern

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SL	Pattern	Existing Land Use (Ha)
1	Mining Area	0.00
2	Office	0.00
3	Dumping	0.00
4	Road	0.00
5	Garland drain	0.00
6	Settling Pond	0.00
7	Green belt	0.00
8	Safety Zone	0.00
9	Stone Stock yards	0.00
10	Crusher	0.00
11	Unutilized	2.73
	TOTAL	2.73

Land Use Pattern for Proposed Plan Period:

SL	Pattern	Proposed Land Use (Ha)
1	Mining Area	2.09
2	Office	0.00
3	Dumping	0.00
4	Road	0.00
5	Garland drain	0.04
6	Settling Pond	0.03
7	Green Belt	0.00
8	Safety Zone	0.55
9	Stone Stock Yards	0.00
10	Crusher	0.00
11	Unutilized	0.01
	TOTAL	2.73

Land Use Pattern after Life of the Mine:

SL	Pattern	Conceptual Stage Land Use (Acres)	Area to be converted in the conceptual period.
1	Mining Area	5.18	Water body
2	Office	0.00	Green Belt
3	Dumping	0.00	Green Belt
4	Road	0.00	Water body
5	Garland drain	0.10	-
6	Settling Pond	0.09	-
7	Green Belt	0.15	Greenbelt
7	Safety Zone	1.36	Greenbelt
8	Stone Stock Yards	0.00	
9	Crusher	0.00	
8	Unutilized	0.03	
	TOTAL	6.76	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.550 Ha	880
2	Along Approach Road	0.350 km	468
TOTAL			1114 Trees

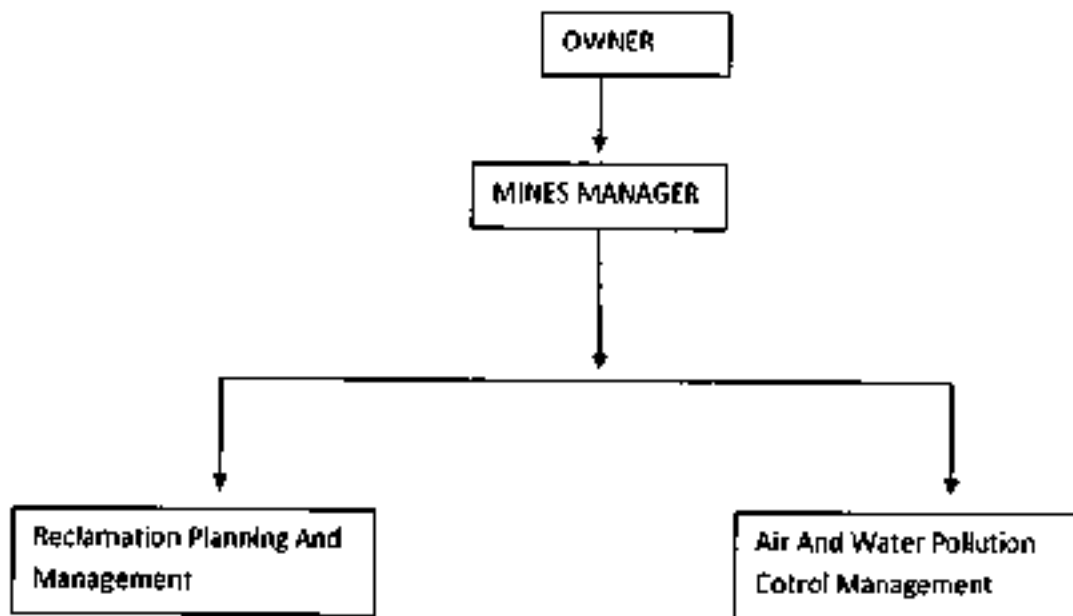
- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Budget for Environmental Management

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. (Rs. 1100 per Tanker)	--	3,30,000
2	Plantation: 468 X 800 = Rs 3,74,400 (Gabion Plantation along approach road) 880 X 400 = 3,52,000 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	7,26,400	72640
3	Environmental Monitoring (One Day Monitoring) • Ambient Air 24 hrs (3 point) -Rs.27,270 • Ground Water (2 point) -Rs.12,420 • Noise 24 hrs (3 point) -Rs.21,000 • Soil (3 point) -Rs.40,920 Total -Rs. 1,01,610 (Per Season) At least two seasons in a Year -Rs. 1,01,610 x 2 = Rs. 2,03,220 Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022	--	2,03,220
Total		7,26,400	605,860

Environment Monitoring Programme :

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Water	2 stations	6 Monthly
3.	Noise	3 stations	6 Monthly
4.	Soil	3 stations	6 Monthly



Solid Waste Management

During first year 62580 cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced
- Optimum quantity of explosives would be used.
- Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly

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Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on Gaur road by using water Tankers.
- ✓ Regular repair of Haul road
- ✓ All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Hazard Identification & Risk Analysis in Stone Mining operation

S. No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed

- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken.

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine

- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.

- Mine road will be cleaned dally to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.

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- I. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Rambani Stone Mine of M/s Individual Proprietorship (Prop. : Shri Ramrup Bhagat), Village : Rambani, Thana : Gopikandar, Distt. : Dumka, Jharkhand (2.73 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

13. Chandangaria Stone Deposit of Shri Amit Kumar Dokania, Village : Chandangaria, Thana : Shikaripara, Distt. : Dumka, Jharkhand (2.995 Ha).

(Proposal no.: SIA/JH/MIN/ 502130 /2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 25.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 1,11,420.75 Cum. / annum or 3,00,836.03 TPA

Project and Location Details:

Sl	Parameter	Details	
1	Project Name	Chandangaria Stone Mine	
2	Lessee:	Proponent- Shri Amit Kumar Dokania	
3	Lessee Address	S/O - Sri Ramesh Kumar Dokania Address- Sabji Mandi Road, Po + Ps- Barharwa, District- Sahibganj, Jharkhand	
4	Lease Area	2.995 Ha	
5	Type of Land	Non Forest Relyati Land	
6	Project Cost	Capital Cost: Rs. 104.89 Lakhs	Recurring Cost: Rs. 10.35 Lakhs
7	EMP Budget	Capital Cost: Rs. 9.068 Lakhs	Recurring Cost: Rs. 5.939 Lakhs
8	New or Expansion	New	
9	Mineable Reserves	cum.: 4,39,684.7 cum	Tonnes: 11,87,148.69 tons
10	Mine Life	5 years.	
11	Man power	24 Person	
12	Water Requirement	7.16 KLD (Drinking: 0.36 KLD, Dust Suppression: 2.00 KLD, Plantation: 4.80 KLD)	
13	Water Source	From Nearby villages by tankers	
14	DG Set / power	60 KVA D.G. Set proposed	
15	Crusher	No crusher	
16	Nearest Water Body	Barkundi Nala at 8.13 km NW direction	
17	Nearest Habitation	Chandangaria Village – 1.28 Km in SE Direction	
18	Nearest Rail	Pakdaha Railway Station is at areal distance of 6.8 km North direction	

	Station		
19	Nearest Air Port	:	Deoghar Airport is at areal distance of 92.90 km NW direction.
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer NOC. letter no.-1126 Dated- 18/04/2023
21	Road & Highways	:	The lease area is well connected with NH-114A (Dumka-Rampurhat) Road at about 4.4 km on northern side and easily approachable from village road..

CO-ORDINATES

Point Name	Latitude	Longitude
1	24°10' 46.3068"N	87°34' 34.6168"E
2	24°10' 43.0106"N	87°34' 38.6847"E
3	24°10' 41.8864"N	87°34' 38.0888"E
4	24°10' 38.3522"N	87°34' 37.8872"E
5	24°10' 39.286"N	87°34' 35.0979"E
6	24°10' 39.7735"N	87°34' 35.0485"E
7	24°10' 39.7886"N	87°34' 32.9703"E
8	24°10' 40.8713"N	87°34' 32.7297"E
9	24°10' 41.1374"N	87°34' 31.7137"E
10	24°10' 41.4222"N	87°34' 32.0368"E
11	24°10' 43.1603"N	87°34' 30.9366"E
12	24°10' 45.1179"N	87°34' 32.4347"E
13	24°10' 44.3632"N	87°34' 34.2955"E
14	24°10' 44.9785"N	87°34' 34.521"E
15	24°10' 45.3595"N	87°34' 33.9613"E

LAND DETAILS

Khata no.	Plot no.
16, 24, 27, 32, 36, 49, 51 & 60	39, 40, 44, 46, 47 (P), 48 (P), 49 (P), 50 (P), 51(P) & 52 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LOI) has been issued by District Mining Officer, Dumka vide letter no. 844/M, dated 20.07.2024.
2	CO	:	The CO, Shikaripara vide letter no. 481/Ra., dated 20.04.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatlyan & Register II.
3	DMO	:	DMO, Dumka vide memo no. 492/M, dated 01.04.2023 certified

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		that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	DFO, Wildlife Division, Hazaribag vide letter no. 835, dated 26.04.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	Division Forest Officer, Dumka Forest Division vide letter no. 1126, dated 18.04.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	This project is mentioned in approved DSR of Dumka District (Sl. no. 26, Page no. 154).
7	Gram Sabha	Gram Sabha conducted on 29.03.2023.
8	Mine Plan Approval	Approved by District Mining Officer, Dumka vide Letter No. 1067/M, dated 18.09.2024.
9	Qualified Person	Shri Vidya Bhushan Mishra vide letter dated 25.10.2024 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi-Mechanized Method	
2	Quarry Area	:	2.995 Ha	Life of Mine – 5 year
3	Waste Generation	:	29694.00 cum	
4	Stripping Ratio	:	01:08	
5	Working Days	:	300	
6	Benchest size	:	3 m x 3 m.	
7	Elevation of Mine	:	138m –109m AMSL	
8	Ground Level Elevation	:	109 AMSL	
9	Ultimate Working Depth	:	29 m AMSL	
10	Water Table	:	Post Monsoon – 105 m AMSL Pre Monsoon – 101.8m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	29694 kg Slurry explosives/day	
13	Diesel/Fuel requirement	:	HSD – 260 liters / day (78 KL/year)	

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum	I.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.
1st	106801.85	2.7	288365.00	356.00	961.2	13386.00	44.62
2nd	107539.05	2.7	290355.44	358.46	967.84	873.00	2.91
3rd	109543.55	2.7	295767.59	365.14	985.87	9555.00	31.85
4th	111420.75	2.7	300836.03	371.40	1,002.78	5880.00	19.6
5th	110124.00	2.7	297334.80	367.08	991.11	00.00	00.00
Total	545429.20	2.7	1472658.84	1,818.09 (max)	4,908.86 (max)	29694.00	98.98

Land Use pattern

SL	Pattern of Utilization	Existing Land Use (Ha)	Proposed Land Use (Ha)	Conceptual Land Use (Ha)
1	Excavation	00	2.413 (0.183ha area shall be Backfilled, 1.448ha converted in to water reservoir & 0.782ha in to water reservoir & 0.782ha)	2.413 (0.183ha area shall be Backfilled, 1.448ha converted in to water reservoir & 0.782ha in to water reservoir & 0.782ha)
2	Waste Dump	00	0.00 (waste dump to be removed and backfilled)	Nil (waste dump to be removed and backfilled)
3	Road	00	0.0 (Comes under mining)	0.0
4	Crusher	00	0.0	0.0
5	Safety Zone Plantation	00	0.582	0.582
	TOTAL	2.995	2.995	2.995

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.582 Ha	931

2	Along Approach Road	0.501m	931
TOTAL			1599

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule Issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

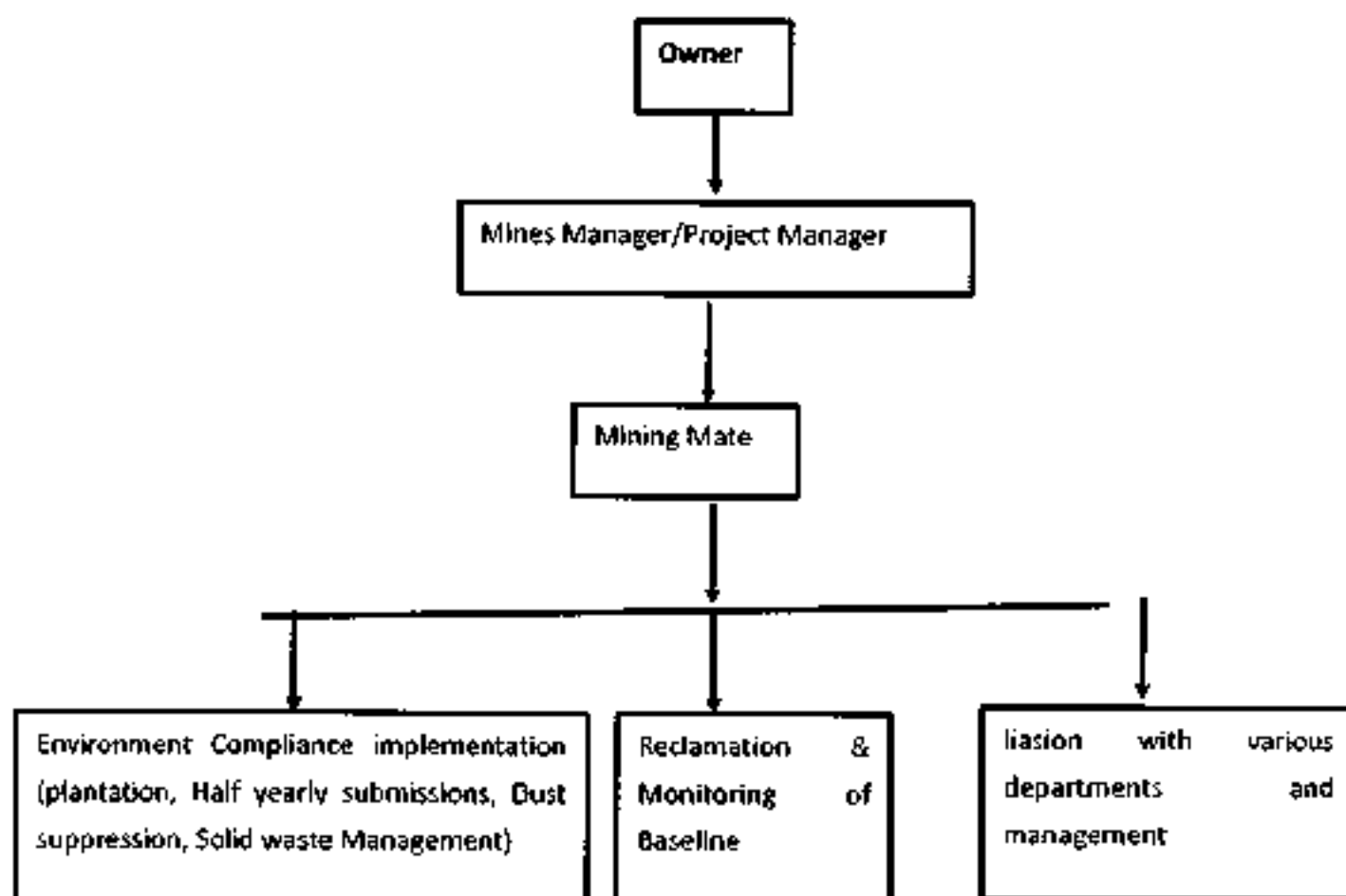
Budget for Environmental Management

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. (Rs. 1000 per Tanker)	--	3,00,000
2	Plantation 668 X 800 = Rs 5,34,400 (Gabion Plantation along approach road) 931 X 400 = 3,72,400 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	9,06,800	90,680
3	Environmental Monitoring (One Day Monitoring) - Ambient Air 24 hrs (3 point) - Rs.27,270 - Ground Water (2 point) - Rs.12,420 - Noise 24 hrs (3 point) - Rs.21,000 - Soil (3 point) -Rs.40,920 Total -Rs. 1,01,610 (Per Season) At least two seasons in a Year -Rs. 1,01,610 x 2 = Rs. 2,03,220 Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022	--	2,03,220

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
Total		9,06,800	5,93,900

Environment Monitoring Programme

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Water	2 stations	6 Monthly
3.	Noise	3 stations	6 Monthly
4.	Soil	3 Station	6 Monthly



Solid Waste Management

29.694.00 cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced
- Optimum quantity of explosives would be used.
- Blasting to be done during favorable weather conditions

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on Gaur road by using water Tankers.
- ✓ Regular repair of Haul road
- ✓ All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Hazard identification & Risk Analysis in Stone Mining operation

S. No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock	Occasional	Major	6

		(Bodily Injury)			
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours

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- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)

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- Untrained drivers
- Overtuning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard.
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.

- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Chandangaria Stone Deposit of Shri Amit Kumar Dokaria, Village : Chandangaria, Thana : Shikaripara, Distt. : Dumka, Jharkhand (2.995 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.

- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

14. Chandangaria Stone Deposit – 1 of Shri Ramesh Kumar Dokania, Village : Chandangaria, Thana : Shikaripara, Distt. : Dumka, Jharkhand (1.942 Ha).

(Proposal no.: SIA/JH/MIN/ 502128 /2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 25.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 66,279.60 Cum. / annum or 1,78,954.92 TPA (max.)

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Chandangaria Stone Mine
2	Lessee:	Proponent- Mr. Ramesh Kumar Dokania
3	Lessee Address	Prop- Shri Rakesh Kumar Yadav Sri Ramesh Kumar Dokania S/O - Late Om Prakash Dokania Sabji Mandi Road P.O.+P.S. - Barharwa District - Sahibganj (Jharkhand)
4	Lease Area	1.942 Ha
5	Type of Land	Non Forest Raiyati Land
6	Project Cost	Capital Cost: Rs. 71.89 Lakhs Recurring Cost: Rs. 7.2 Lakh
7	EMP Budget	Capital Cost: Rs. 7.56 Lakhs Recurring Cost: Rs. 5.19 Lakhs
8	New or Expansion	New
9	Mineable Reserves	cum.: 321742.20 cum Tonnes: 8,68,703.94 tons

10	Mine Life	:	5 years.
11	Man power	:	16 Person
12	Water Requirement	:	6.46 KLD (Drinking: 0.24 KLD, Dust Suppression: 2.12 KLD, Plantation: 4.10 KLD)
13	Water Source	:	From Nearby villages by tankers
14	D.G. Set / power	:	60 KVA D.G. Set proposed
15	Crusher	:	No crusher
16	Nearest Water Body	:	Mayurakshi River 26.0 km - N direction
17	Nearest Habitation	:	Saharpur – 0.50 km in the W direction
18	Nearest Rail Station	:	Pakdaha Harinsing Railway Station is at areal distance of 1.94 km W direction.
19	Nearest Air Port	:	Deoghar Airport is at aerial distance of 92.90 km SW direction.
20	Nearest Forest	:	More than 250 m, as per Forest Division, Dumka Letter No. – 1125 Dated - 18/04/2023
21	Road & Highways	:	The distance of Approach Road is 395 m, after that this road connects to NH-114A (Dumka-Rampurhat Road) at 4.40 km (aerial distance)

CO-ORDINATES

Latitude	Longitude
24°10'48.5568" N	87°34'27.366" E
To	
24°10' 43.1603" N	87°34' 34.6188" E

LAND DETAILS

Khata no.	Plot no.
14, 32, 36 & 51	21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 36, 37, 38, 42 & 43

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LOI) has been issued by District Mining Officer, Dumka vide letter no. 845/M, dated 20.07.2024.
2	CO	:	The CO, Shikaripara vide letter no. 479/Ra., dated 20.04.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatyan & Register II.
3	DMO	:	DMO, Dumka vide memo no. 495/M, dated 01.04.2023 certified that no other mining lease area exists within 500 meters radius

		from proposed project site.
4	DFO Wild Life	DFO, Wildlife Division, Hazaribag vide letter no. 837, dated 26.04.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	Division Forest Officer, Dumka Forest Division vide letter no. 1125, dated 18.04.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	This project is mentioned in approved DSR of Dumka District (Sl. no. 36, Page no. 156)
7	Gram Sabha	Gram Sabha conducted on 29.03.2023.
8	Mine Plan Approval	Approved by District Mining Officer, Dumka vide Letter No. 1105/M, dated 26.09.2024.
9	Qualified Person	Shri Vidya Bhushan Mishra vide letter no. MPDC/SEAC/106, dated 25.10.2024 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method	
2	Quarry Area	:	1.942 Ha	Life of Mine – 5 year
3	Waste Generation	:	36,333.80 cum	
4	Stripping Ratio	:	10:07	
5	Working Days	:	300	
6	Bench: size	:	6 m x 6 m,	
7	Elevation of Mine	:	137 m – 124 m AMSL	
8	Ground Level Elevation	:	124 AMSL	
9	Ultimate Working Depth	:	109 m AMSL	
10	Water Table	:	Post Monsoon – 113 m AMSL Pre Monsoon – 108.8 m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	39.95 kg nitro mix explosives/day	
13	Diesel/Fuel requirement	:	HSD – 232 liters / day (70 KL/year)	

Production Details

Year	Production of stone in Cum	Production of stone	of in	Overburden in cum	Intercalated waste in Cum	Total Waste in

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		Tonnes			Cum
1 st Year	62663.90	169192.53	6708.00	3298.10	10006.10
2 nd Year	63127.50	170444.25	3800.00	3322.50	7122.50
3 rd Year	64691.20	174666.24	8892.00	3404.80	12296.80
4 th Year	64980.00	175446.00	0.00	3420.00	3420.00
5 th Year	66279.60	178954.92	000	3488.40	3488.40
Total	321742.20	868703.94	19400.00	16933.80	36333.80

Land Use

EXISTING, PROPOSED & CONCEPTUAL LAND USE

Sl	Pattern	Existing Land Use (Ha)	Proposed Land Use (Ha)	Conceptual Land Use (Ha)	Area to be converted in the conceptual period
1	Mining Activities	0.00	1.415 (0.105 Ha. area shall be Backfilled, 0.932 Ha. converted in to water reservoir & 0.378 Ha. shall be left as dead benches)	1.415 (0.105 Ha. area shall be Backfilled, 0.932 Ha. converted in to water reservoir & 0.378 Ha. shall be left as dead benches)	Water body
2	Offices/ Store etc.	0.00	0.00	0.00	
3	Mining Road	0.00	0.0 (comes under mining)	0.0	Water body
4	Safety Zone	0.00	0.527	0.527	Greenbelt
5	Unutilized	1.942	0.00	0.00	Greenbelt
	TOTAL	1.942	1.942	1.942	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.527 Ha	843

2	Along Approach Road	395 m	524
TOTAL			1,367

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report

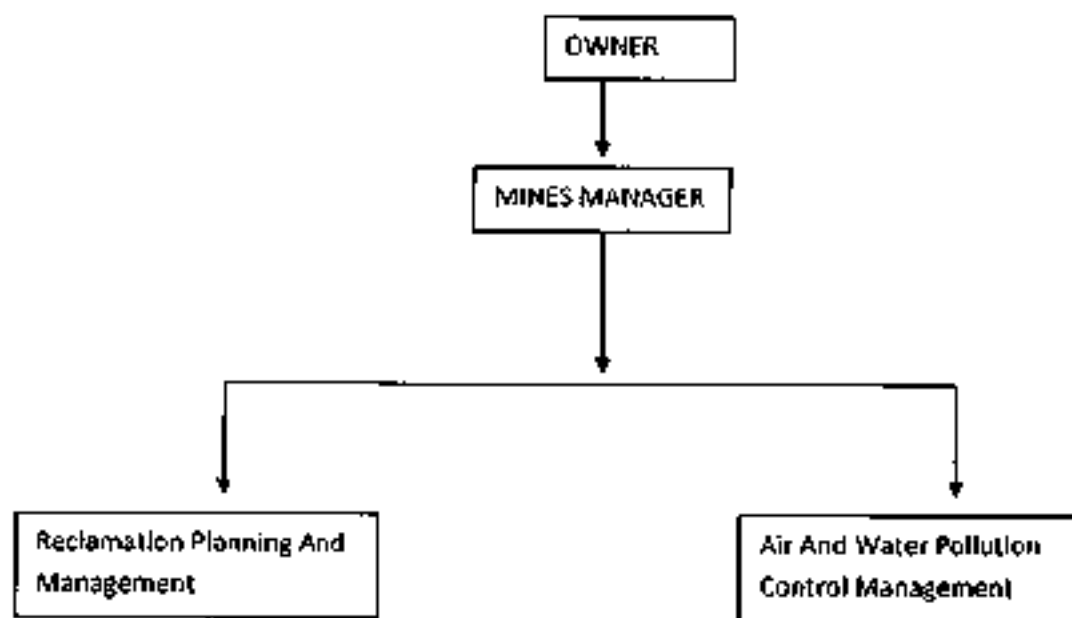
Budget for Environmental Management

Sl. No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. (Rs. 800 per Tanker)	--	2,40,000
2	Plantation 524 X 800 = Rs 4,19,200 (Gablon Plantation along approach road) 843 X 400 = 3,37,200 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	7,56,400	75,640
3	Environmental Monitoring (One Day Monitoring) - Ambient Air 24 hrs (3 point) - Rs.27,270 - Ground Water (2 point) - Rs.12,420 - Noise 24 hrs (3 point) - Rs.21,000 - Soil (3 point) -Rs.40,920 Total -Rs. 1,01,610 (Per Season) At least two seasons in a Year -Rs. 1,01,610 x 2 = Rs. 2,03,220 - Source: Central Pollution Control Board Notification, New Delhi, the 23rd	--	2,03,220

Sl. No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
	February, 2022		
Total		7,56,400	5,18,860

Environment Monitoring Programme

SL No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
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3.	Noise	3 stations	6 Monthly
4.	Soil	3 Station	6 Monthly



Solid Waste Management

During first year 36,333.80 cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
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Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

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S. No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading	Very Unlikely	Minor	20

		material, Exposure to Dust			
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.

- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.

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- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidl etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles. Keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.

- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Chandangaria Stone Deposit - 1 of Shri Ramash Kumar Dokania, Village : Chandangaria, Thana : Shikaripara, Distt. : Dumka, Jharkhand (1.942 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying

water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.

- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

25. Aamchuwan Stone Mine of M/s Baba Basukinath Traders, Village : Aamchuwan, Thana : Shikaripara, Distt. : Dumka, Jharkhand (2.14 Ha).

(Proposal no.: SIA/JH/MIN/ 502118 /2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 25.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 42263 Cum. / annum or 127609 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Aamchuwan Stone Mine
2	Lessee:	Baba Basukinath Traders Proprietor- Shri Santosh Kumar
3	Lessee Address	S/O Shri Anandi Singh, R/o Vill + P.O. - Sankurha, Thana - Jamui, Dist -Jamui(Bihar) 811307,Current Address - Ghat Rashikpur, DudhaniNear Uco Bank, P.O + Thana + Dist - Dumka.
4	Lease Area	2.14 Ha
5	Type of Land	Non Forest Raiyati Land

6	Project Cost	:	Capital Cost: Rs. 130.18 Lakhs	Recurring Cost: Rs. 24.82 Lakhs
7	EMP Budget	:	Capital Cost: Rs. 7.544 Lakhs	Recurring Cost: Rs. 6.086 Lakhs
8	New or Expansion	:	New	
9	Mineable Reserves	:	cum.: 261144 cum	Tonnes: 705088 tons
10	Mine Life	:	5 years.	
11	Man power	:	25 Person	
12	Water Requirement	:	6.03 KLD (Drinking: 0.375 KLD, Dust Suppression: 1.5 KLD, Plantation: 4.158 KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	60 KVA D.G. Set proposed	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Brahmani river - 9.40 Km In N direction	
17	Nearest Habitation	:	Aamchuwan Village - 0.750 Km In West direction	
18	Nearest Rail Station	:	Pinargaria Junction is at aerial distance of 4.40 km NE direction.	
19	Nearest Air Port	:	Deoghar Airport is at aerial distance of 98.40 km NW direction	
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer NOC. letter no.- 2474 Dated- 08/11/2023	
21	Road & Highways	:	A well motorable road is connected to the Mine Site at a distance of 750 Km NW direction. Road is at aerial distance of 4.6 Km North Direction.	

CO-ORDINATES

Point ID	Latitude	Longitude
P1	24° 10' 30.26837025" N	087° 37' 30.70154156" E
P2	24° 10' 29.96617040" N	087° 37' 30.71261565" E
P3	24° 10' 29.44077003" N	087° 37' 30.41206480" E
P4	24° 10' 28.91883311" N	087° 37' 30.23425652" E
P5	24° 10' 28.27199340" N	087° 37' 30.08407267" E
P6	24° 10' 27.92617840" N	087° 37' 29.97946477" E
P7	24° 10' 27.85503486" N	087° 37' 29.49607315" E
P8	24° 10' 27.50097420" N	087° 37' 29.40414538" E

P9	24° 10' 27.33343925" N	087° 37' 29.79033329" E
P10	24° 10' 26.96099178" N	087° 37' 29.60717626" E
P11	24° 10' 26.92780517" N	087° 37' 29.08087796" E
P12	24° 10' 26.80454610" N	087° 37' 29.07238535" E
P13	24° 10' 26.60286079" N	087° 37' 29.12786796" E
P14	24° 10' 26.36229800" N	087° 37' 28.67304442" E
P15	24° 10' 26.34097861" N	087° 37' 28.36100866" E
P16	24° 10' 26.03156146" N	087° 37' 28.18132117" E
P17	24° 10' 25.55670219" N	087° 37' 28.84556567" E
P18	24° 10' 25.40025309" N	087° 37' 29.06555025" E
P19	24° 10' 24.54247669" N	087° 37' 29.11783930" E
P20	24° 10' 24.27972314" N	087° 37' 28.62723176" E
P21	24° 10' 24.34467813" N	087° 37' 28.35935801" E
P22	24° 10' 23.83486312" N	087° 37' 28.03191915" E
P23	24° 10' 23.42556896" N	087° 37' 27.79498191" E
P24	24° 10' 23.21431728" N	087° 37' 28.08253244" E
P25	24° 10' 22.56498277" N	087° 37' 27.83471004" E
P26	24° 10' 22.58830740" N	087° 37' 27.64913305" E
P27	24° 10' 22.67575126" N	087° 37' 27.48707432" E
P28	24° 10' 22.88661128" N	087° 37' 27.18392456" E
P29	24° 10' 23.54329322" N	087° 37' 27.16194105" E
P30	24° 10' 23.80824973" N	087° 37' 27.10676914" E
P31	24° 10' 24.17169664" N	087° 37' 27.01068856" E
P32	24° 10' 24.11437034" N	087° 37' 26.84477102" E
P33	24° 10' 23.79047068" N	087° 37' 26.27893237" E
P34	24° 10' 24.19775603" N	087° 37' 26.00570521" E
P35	24° 10' 24.96701371" N	087° 37' 25.80602894" E

P36	24° 10' 25.46084545" N	087° 37' 25.84432340" E
P37	24° 10' 26.11849367" N	087° 37' 26.08683353" E
P38	24° 10' 26.43569151" N	087° 37' 26.37555209" E
P39	24° 10' 27.00517755" N	087° 37' 26.70139572" E
P40	24° 10' 27.17100135" N	087° 37' 26.41502483" E
P41	24° 10' 27.95080808" N	087° 37' 26.32309009" E
P42	24° 10' 28.57605835" N	087° 37' 26.43382061" E
P43	24° 10' 29.77161047" N	087° 37' 26.67894878" E
P44	24° 10' 30.87126380" N	087° 37' 26.70510676" E
P45	24° 10' 31.73657789" N	087° 37' 26.82093994" E
P46	24° 10' 32.19123496" N	087° 37' 27.05657032" E
P47	24° 10' 32.02093303" N	087° 37' 27.39629319" E
P48	24° 10' 31.92983781" N	087° 37' 27.64015698" E
P49	24° 10' 31.66870256" N	087° 37' 28.16758060" E
P50	24° 10' 31.42912579" N	087° 37' 28.34521205" E
P51	24° 10' 31.08802542" N	087° 37' 28.71682544" E
P52	24° 10' 30.88845008" N	087° 37' 28.96365850" E
P53	24° 10' 30.77508246" N	087° 37' 29.23913984" E
P54	24° 10' 30.53672810" N	087° 37' 29.82455455" E
P55	24° 10' 30.31492547" N	087° 37' 30.35356326" E

LAND DETAILS

Khata no.	Plot no.
01, 06, 12, 19, 23, 45 & 49	632, 640 (P), 641 (P), 642, 643, 644, 645, 646 (P), 647 (P), 648, 649, 650, 651, 656 (P) & 657 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Dumka vide letter no. 729/M, dated 28.06.2024.
2	CO	:	The CO, Shikarpara vide letter no. 405/Ra., dated 05.04.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatriyan & Register II.
3	DMO	:	DMO, Dumka vide memo no. 948/M, dated 12.06.2023 certified that 01 other mining lease area (6.99 Acre) exists within 500 meters radius from proposed project site and total area is 12.29 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 987, dated 20.05.2023 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Dumka Forest Division vide letter no. 1167, dated 25.04.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Dumka District (Sl. no. 13, Page no. 280).
7	Gram Sabha	:	Gram Sabha conducted on 02.09.2022.
8	Mine Plan Approval	:	Approved by District Mining Officer, Dumka vide Letter No. 1187/M, dated 18.10.2024.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi-Mechanized Method	
2	Quarry Area	:	2.14 Ha	Life of Mine – 5 year
3	Waste Generation	:	45400 cum	
4	Stripping Ratio	:	01:04	
5	Working Days	:	300	
6	Bench: size	:	6 m x 6 m,	
7	Elevation of Mine	:	77m-80m AMSL	
8	Ground Level Elevation	:	20-23m AMSL	

9	Ultimate Working Depth	:	39 m AMSL
10	Water Table	:	Post Monsoon – 27.7m AMSL Pre Monsoon – 23.8m AMSL
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	47.4 kg Slurry explosives/day
13	Diesel/Fuel requirement	:	HSD – 357 liters / day (107.1 KL/year)

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum {O.B.
1st	47263	2.7	127609	158	425	21550	72
2nd	54338	2.7	146713	181	489	23850	80
3rd	50274	2.7	135740	168	452	0	0
4th	54720	2.7	147744	182	492	0	0
5th	54549	2.7	147282	182	491	0	0
Total	261144	2.7	705088	182 (Max.)	492 (Max.)	45400	80 (Max.)

Land Use

Existing Land Use pattern

SL	Pattern	Existing Land Use (Ha)
1	Mining Area	0.00
2	Office	0.00
3	Dumping	0.00
4	Road	0.00
5	Garland drain	0.00
6	Settling Pond	0.00
7	Green belt/ Safety Zone	0.00
8	Utilized	0.00
9	Unutilized	2.14

	TOTAL	2.14

Land Use Pattern for Proposed Plan Period:

SL	Pattern	Proposed Land Use (Ha)
1	Mining Area	1.497
2	Office	0.004
3	Dumping	0.00
4	Road	0.040
5	Garland drain	0.0364
6	Settling Pond	0.012
7	Stone Stock yards	0.00
8	Safety Zone	0.334
9	Unutilized	0.00
	TOTAL	2.14

Land Use Pattern after Life of the Mine:

SL	Pattern	Conceptual Stage Land Use (Ha)	Area to be converted in the conceptual period.
1	Mining Area	1.497	Water body
2	Office	0.004	Green Belt
3	Dumping	0.00	Green Belt
4	Road	0.040	Water body
5	Garland drain	0.0364	-
6	Settling Pond	0.012	-
7	Green Belt	0.00	
7	Safety Zone	0.334	Greenbelt
8.	Stone Stock yards	0.00	
9	Unutilized	0.00	
	TOTAL	2.14	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.554 Ha	886
2	Along Approach Road	0.750 m	500

TOTAL	1386

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

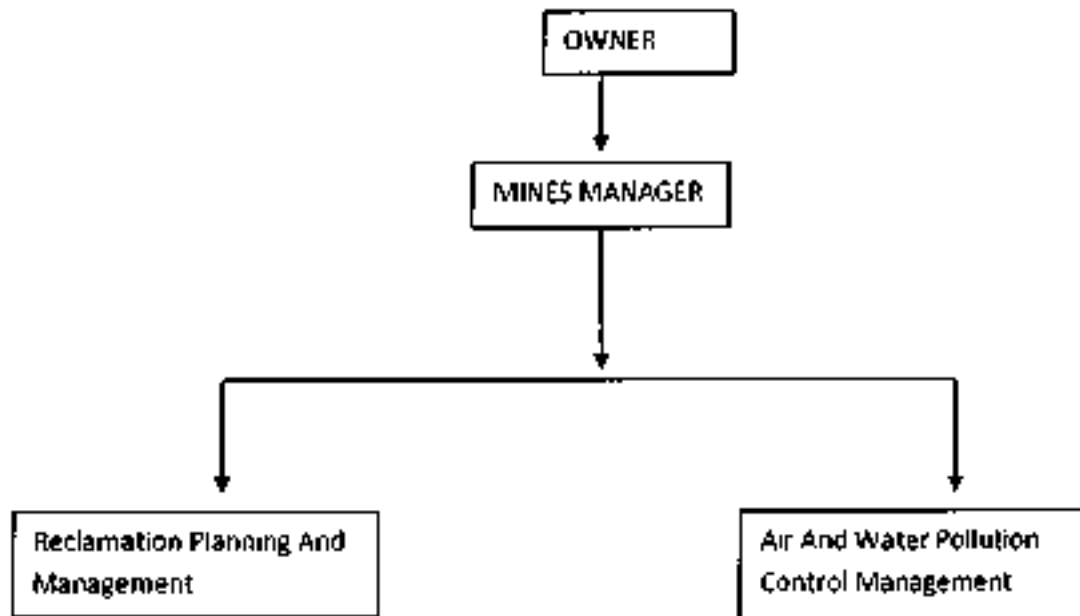
Budget for Environmental Management

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. (Rs. 1100 per Tanker)	--	3,30,000
2	Plantation 500 X 800 = Rs 4,00,000 (Gabion Plantation along approach road) 886 X 400 = 3,54,400 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	7,54,400	75440
3	Environmental Monitoring (One Day Monitoring) Ambient Air 24 hrs (3 point) -Rs.27,270 Ground Water (2 point) -Rs.12,420 Noise 24 hrs (3 point) -Rs.21,000 Soil (3 point) -Rs.40,920 Total -Rs. 1,01,610 (Per Season) At least two seasons in a Year -Rs. 1,01,610 x 2 = Rs. 2,03,220 Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022	--	2,03,220
Total		7,54,400	6,08,660

Environment Monitoring Programme :

SL. No.	Description	No. Of Monitoring Stations	Duration

1.	Air	3 stations	6 Monthly
2.	Water	2 stations	6 Monthly
3.	Noise	3 stations	6 Monthly
4.	Soil	3 stations	6 Monthly



Solid Waste Management

During first year 21550 cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced
- Optimum quantity of explosives would be used.
- Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on Haul road by using water Tankers.
- ✓ Regular repair of Haul road
- ✓ All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Hazard identification & Risk Analysis In Stone Mining operation

S. No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

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Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

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The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

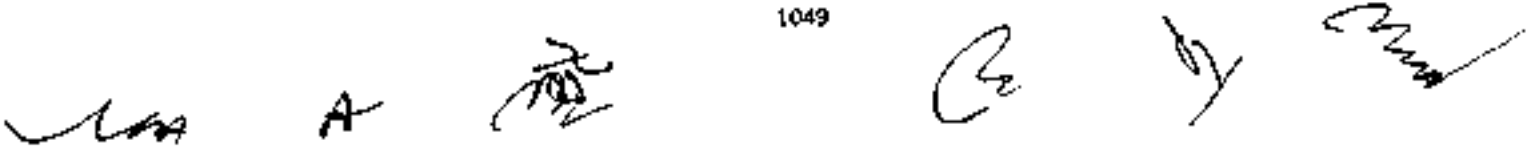
Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)

The bottom of the page features several handwritten signatures and initials in black ink. From left to right, there is a signature that appears to be 'LMA', a single letter 'A', a signature that looks like 'Raj', a large stylized 'G', a signature that looks like 'Jy', and a signature that looks like 'Mun'. There is also a vertical line on the far right edge.

- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

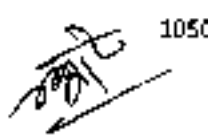
The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.








- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Aamchuwan Stone Mine of M/s Baba Basukinath Traders, Village : Aamchuwan, Thana : Shikaripara, Distt. : Dumka, Jharkhand (2.14 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07 2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone.

- Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
 - V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to be submitted along with 6 monthly compliance.
 - VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
 - VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
 - VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

16. Barmaasia Stone Mine of Md. Abdussalam Ansari, Village : Barmaasia, Thana : Shikaripara, Distt. : Dumka, Jharkhand (1.50 Ha).

(Proposal no.: SIA/JH/MIN/ 502283 /2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 25.10.2024.

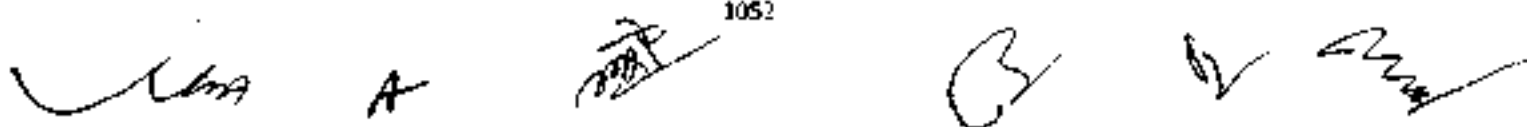
Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

The cluster certificate issued by DMO, Dumka vide letter no. 1021/M, dated 05.07.2023 has not included plot no. 1891 in his certificate. This plot no. 1891 is a part of the project area.

Project Authorities are required to submit revised cluster certificate from DMO, Dumka including all the plots of the project

Project will be taken up for consideration after submission of fresh cluster certificate from DMO, Dumka.



17. Salbonapahar Stone Mine of Mr. Mithun Ansari, Village : Salbonapahar, Thana : Shikaripara, Distt. : Dumka, Jharkhand (2.19 Ha).

(Proposal no.: SIA/JH/MIN/ 501041 /2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 25.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 38,238 Cum. / annum or 1,03,243 TPA (max.)

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Salbonapahar Stone Mine
2	Lessee:	Proponent- Mr. Mithun Ansari
3	Lessee Address	Prop- Mithun Ansari S/O Shri Islam Mlyan Village- Sarasdangal, Post – Sarasdangal, Thana- Shikaripara District- Dumka State – Jharkhand
4	Lease Area	2.19 Ha
5	Type of Land	Non Forest Raiyati Land
6	Project Cost	Capital Cost: Rs. 130.39 Lakhs Recurring Cost: Rs. 14.85 Lakhs
7	EMP Budget	Capital Cost: Rs. 11.96 Lakhs Recurring Cost: Rs. 5.19 Lakhs
8	New or Expansion	New
9	Mineable Reserves	cum.: 1,18,642 cum Tonnes: 3,20,333 tons
10	Mine Life	5 years.
11	Man power	35 Person
12	Water Requirement	7.025 KLD (Drinking: 0.525 KLD, Dust Suppression: 1.80 KLD, Plantation: 4.70 KLD)
13	Water Source	From Nearby villages by tankers
14	D.G. Set / power	20 KVA D.G. Set proposed
15	Crusher	No crusher
16	Nearest Water Body	Brahmani River – 6.50 km – N direction
17	Nearest	Shikaripara – 10 km in the NW direction

	Habitation		
18	Nearest Rail Station	:	Pakdaha Harinsing Railway Station is at areal distance of 5.30 km NNE direction.
19	Nearest Air Port	:	Deoghar Airport is at aerial distance of 92.06 km NW direction.
20	Nearest Forest	:	More than 250 m, as per Forest Division, Hazaribagh Letter No. - 1202 Dated - 23/06/2024
21	Road & Highways	:	The distance of Approach Road is 310 m, after that this road connects to NH-114A (Dumka-Rampurhat Road) at 2.84 km (aerial distance) NNE direction

CO-ORDINATES

Point ID	Longitude	Latitude
1	087° 33' 52.64660916" E	24° 11' 29.87906303" N
2	087° 33' 53.15068350" E	24° 11' 29.72567854" N
3	087° 33' 53.64376945" E	24° 11' 29.57233432" N
4	087° 33' 54.66159427" E	24° 11' 29.69211566" N
5	087° 33' 55.74863007" E	24° 11' 29.75213705" N
6	087° 33' 56.47356141" E	24° 11' 29.76635449" N
7	087° 33' 57.20381961" E	24° 11' 29.78282719" N
8	087° 33' 57.80345109" E	24° 11' 29.83750073" N
9	087° 33' 58.63279039" E	24° 11' 30.13712878" N
10	087° 33' 59.34495423" E	24° 11' 30.39037039" N
11	087° 34' 00.06598018" E	24° 11' 30.64357811" N
12	087° 34' 00.80217763" E	24° 11' 31.04109219" N
13	087° 34' 01.55395210" E	24° 11' 31.59429106" N
14	087° 34' 02.05910168" E	24° 11' 31.92470802" N
15	087° 34' 02.50044781" E	24° 11' 32.17472640" N
16	087° 34' 02.97230633" E	24° 11' 32.43113369" N
17	087° 34' 03.14706660" E	24° 11' 32.51371971" N
18	087° 34' 03.28386128" E	24° 11' 31.86682498" N
19	087° 34' 03.37305656" E	24° 11' 31.19702228" N
20	087° 34' 03.47156817" E	24° 11' 30.78795001" N
21	087° 34' 03.58556532" E	24° 11' 30.27835062" N

22	087° 34' 03.61588017" E	24° 11' 29.91992953" N
23	087° 34' 03.10566283" E	24° 11' 29.80575330" N
24	087° 34' 02.60445438" E	24° 11' 29.64472239" N
25	087° 34' 02.01754340" E	24° 11' 29.34062165" N
26	087° 34' 01.73476491" E	24° 11' 29.19828561" N
27	087° 34' 01.21182637" E	24° 11' 28.77201709" N
28	087° 34' 00.71297766" E	24° 11' 28.42271750" N
29	087° 34' 00.13600641" E	24° 11' 28.28179981" N
30	087° 33' 59.59111715" E	24° 11' 28.18173036" N
31	087° 33' 59.13048307" E	24° 11' 28.13792225" N
32	087° 33' 58.92129123" E	24° 11' 26.67912984" N
33	087° 33' 58.04584662" E	24° 11' 26.77374746" N
34	087° 33' 57.22304829" E	24° 11' 26.91076204" N
35	087° 33' 56.14251187" E	24° 11' 27.03702668" N
36	087° 33' 56.27608841" E	24° 11' 27.42670339" N
37	087° 33' 56.43251477" E	24° 11' 27.93399726" N
38	087° 33' 56.54941680" E	24° 11' 28.32015920" N
39	087° 33' 55.75415390" E	24° 11' 28.35204802" N
40	087° 33' 55.48249370" E	24° 11' 28.47986185" N
41	087° 33' 55.01343016" E	24° 11' 28.45363931" N
42	087° 33' 54.34417114" E	24° 11' 28.28314455" N
43	087° 33' 53.47869445" E	24° 11' 28.06655547" N
44	087° 33' 52.83035004" E	24° 11' 27.81567084" N
45	087° 33' 52.36984948" E	24° 11' 27.96304104" N
46	087° 33' 51.87529547" E	24° 11' 28.10468437" N
47	087° 33' 51.91504785" E	24° 11' 28.27783876" N
48	087° 33' 52.14906246" E	24° 11' 28.61642215" N
49	087° 33' 52.45929148" E	24° 11' 29.11729498" N
50	087° 33' 52.59292373" E	24° 11' 29.43966765" N

51	087° 33' 52.64660916" E	24° 11' 29.87906303" N

LAND DETAILS

Plot no.
144 & 147 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Dumka vide letter no. 751/M, dated 03.07.2024.
2	CO	:	The CO, Shikaripara vide letter no. 471/Ra., dated 13.06.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyon & Register II.
3	DMO	:	DMO, Dumka vide memo no. 722/M, dated 25.06.2024 certified that 01 other mining lease area (3.40 Acres) exists within 500 meters radius from proposed project site and total area is 8.80 Acres.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 1202, dated 23.06.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Dumka Forest Division vide letter no. 1372, dated 15.06.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Dumka District (Sl. no. 17. Page no. 152).
7	Gram Sabha	:	Gram Sabha conducted on 26.05.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Dumka vide Letter No. 917/M, dated 06.08.2024.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method

2	Quarry Area	:	2.19 Ha	Life of Mine – 5 year
3	Waste Generation	:	77,782 cum	
4	Stripping Ratio	:	10:07	
5	Working Days	:	300	
6	Bench size	:	6 m x 6 m,	
7	Elevation of Mine	:	243 m – 218 m AMSL	
8	Ground Level Elevation	:	218 AMSL	
9	Ultimate Working Depth	:	208 m AMSL	
10	Water Table	:	Post Monsoon – 208 m AMSL Pre Monsoon – 202 m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	42 kg nitro mix explosives/day	
13	Diesel/fuel requirement	:	HSD – 302 liters / day (90.60 KL/year)	

Production Details

SUMMARY OF YEARWISE OF PRODUCTION						
Years	Production In Cum/Year	Production In Cum/Day	O.B in Cum/Year	Top Soil in Cum/Year	Production In Tons/Year	Prod. In Tons. /Day
1 st	10098	34	24890	10666	27265	91
2 nd	23808	79	11788	5052	64282	214
3 rd	33010	110	11473	4917	89127	297
4 th	38238	127	70	30	103243	344
5 th	13488	45	6227	2669	36418	121
Total	118642	127 Max.	54448	23334	320333	344 Max.

Land Use

Existing Land Use pattern

SL	Pattern	Existing Land Use (Ha)
1	Mining Activities	0.000
2	Offices/ Store etc.	0.000
3	Dumping	0.000

4	Garland drain	0.000
5	Settling Tank	0.000
6	Safety Zone	0.000
7	Stone Stock yards	0.000
8	Unutilized	2.19
	TOTAL	2.19

Land Use Pattern for Proposed Plan Period:

SL	Pattern	Proposed Land Use (Acres)
1	Mining Activities	3.31
2	Offices/ Store etc.	0.02
3	Dumping	0.13
4	Mining Road	0.02
5	Garland drain	0.11
6	Settling Tank	0.04
7	Safety Zone	1.50
8	Greenbelt	0.00
9	Stone Stock yards	0.00
10	Unutilized	0.27
	TOTAL	5.40

Land Use Pattern after Life of the Mine:

SL	Pattern	Conceptual Stage Land Use (Acres)	Area to be converted in the conceptual period.
1	Mining Activities	3.31	Water body
2	Offices/ Store etc.	0.00	Plantation
3	Dumping	0.00	.
4	Mining Road	0.00	Water body

5	Garland drain	0.11	-
6	Settling Tank	0.04	-
7	Safety Zone	1.50	Plantation
8	Greenbelt	0.44	Green Belt
9	Stone Stock yards	0.00	-
10	Unutilized	0.00	Plantation
	TOTAL	5.40	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.7227 Ha	1,156
2	Along Approach Road	0.310 m	412
TOTAL			1,568

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

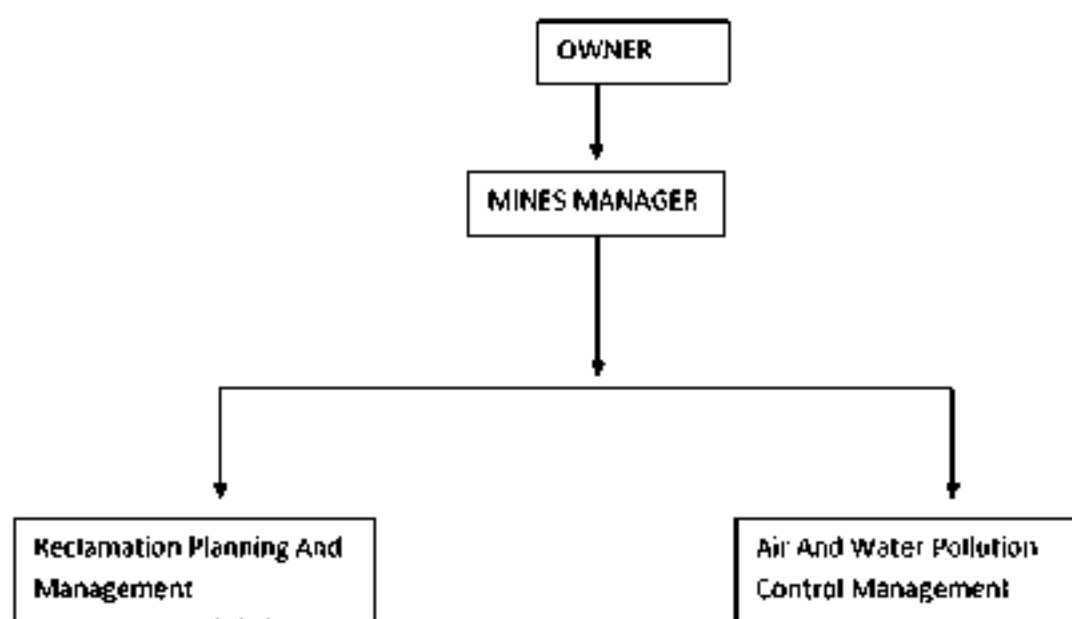
Budget for Environmental Management

Sl. No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. (Rs. 1000 per Tanker)	--	3,00,000
2	Plantation 412 X 1500 = Rs 6,18,000 (Gabion Plantation along approach road) 1156 X 500 = 5,78,000 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	11,96,000	1,19,600

Sl. No.	Particulars	Capital Cost In Rs.	Recurring Cost in Rs. per year
3	Environmental Monitoring (One Day Monitoring) ♦ Ambient Air 24 hrs -Rs.32,000 ♦ Ground Water -Rs.8,000 ♦ Noise 24 hrs - Rs.10,000 Total -Rs. 50,000 (Per Season) At least two seasons in a Year -Rs. 50,000 x 2 = Rs. 1,00,000	..	1,00,000
Total		11,96,000	5,19,600

Environment Monitoring Programme

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Water	2 stations	6 Monthly
3.	Noise	3 stations	6 Monthly
4.	Soil	3 Station	6 Monthly



Solid Waste Management

During first year 77,782 cum. D.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced
- Optimum quantity of explosives would be used.
- Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on Haul road by using water Tankers.
- ✓ Regular repair of Haul road
- ✓ All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Hazard identification & Risk Analysis in Stone Mining operation

S. No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5

2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 Is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

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during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.

- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

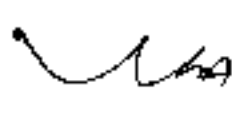
The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.

- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Salbonapahar Stone Mine of Mr. Mithun Ansari, Village : Salbonapahar, Thana : Shikaripara, Distt. : Dumka, Jharkhand (2.19 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged

photographs.

- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

18. Hiring Stone Mine of M/s Maa Bhawani Stone Works (Prop. : Shri Sudhansu Ranjan), Village : Hiring, Thana : Hunterganj, Distt. : Chatra, Jharkhand (1.54 Ha.).

(Proposal no.: SIA/JH/MIN/ 501021 /2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 25.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 21320 Cum. / annum or 59696 TPA

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Hiring Stone Mine
2	Lessee:	: Maa Bhawani Stone Works Proprietor- Shri Sudhansu Ranjan
3	Lessee Address	: S/O Ramnarayan Singh, R/o Village- Hiring, Thana -Hunterganj,Thana No. - 60 District-Chatra, Jharkhand
4	Lease Area	: 1.54 Ha

5	Type of Land	:	Non Forest Baiyati Land
6	Project Cost		Capital Cost: Rs. 100.49 Lakhs Recurring Cost: Rs. 9.45 Lakhs
7	EMP Budget	:	Capital Cost: Rs. 9.388 Lakhs Recurring Cost: Rs6.271 Lakhs
8	New or Expansion	:	New
9	Mineable Reserves	:	cum.: 117810cum Tonnes329868 tons
10	Mine Life	:	10 years.
11	Man power	:	21 Person
12	Water Requirement	:	9.52 KLD (Drinking: 0.315 KLD, Dust Suppression: 4.32 KLD, Plantation: 4.88 KLD)
13	Water Source	:	From Nearby villages by tankers
14	DG Set / power	:	60 KVA D.G. Set proposed
15	Crusher	:	No crusher
16	Nearest Water Body	:	Ghari river – 11.5 Km In North direction
17	Nearest Habitation	:	Hiring Village – 0.260 Km in West direction
18	Nearest Rail Station	:	Ranchi Railway Station Is 130.35 km (aerial distance) in SE direction.
19	Nearest Air Port	:	Birsa Munda Airport (Ranchi) at 133.24 km South East direction.
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer NOC. letter no. 2819 Dated- 07/12/2023
21	Road & Highways	:	A well motorable road is connected to the Mine Site at a distance of 43.78 Km SE direction. NH 22 Road is at aerial distance of 1.08Km West Direction

CO-ORDINATES

Point	Latitude	Longitude
P1	24°25'06.96209" N	84°47'48.04454" E
P2	24°25'06.67556" N	84°47'49.09286" E
P3	24°25'06.03552" N	84°47'49.07202" E
P4	24°25'06.06403" N	84°47'49.31758" E
P5	24°25'05.74766" N	84°47'49.44044" E
P6	24°25'05.47777" N	84°47'49.50618" E
P7	24°25'05.51143" N	84°47'49.66336" E

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P8	24°25'05.91859" N	84°47'49.54135" E
P9	24°25'06.01021" N	84°47'49.93300" E
P10	24°25'06.06032" N	84°47'49.91564" E
P11	24°25'05.97716" N	84°47'49.52382" E
P12	24°25'06.09042" N	84°47'49.42943" E
P13	24°25'06.61696" N	84°47'49.33201" E
P14	24°25'06.63737" N	84°47'50.00215" E
P15	24°25'06.72481" N	84°47'50.54021" E
P16	24°25'06.81190" N	84°47'51.19703" E
P17	24°25'06.72802" N	84°47'51.25585" E
P18	24°25'06.86626" N	84°47'53.14214" E
P19	24°25'05.49674" N	84°47'53.13160" E
P20	24°25'04.28009" N	84°47'53.12224" E
P21	24°25'04.26468" N	84°47'53.01262" E
P22	24°25'03.99284" N	84°47'52.94688" E
P23	24°25'03.78653" N	84°47'52.95048" E
P24	24°25'03.22572" N	84°47'52.97712" E
P25	24°25'03.16193" N	84°47'52.84864" E
P26	24°25'03.11218" N	84°47'52.61849" E
P27	24°25'03.10105" N	84°47'52.38766" E
P28	24°25'03.15692" N	84°47'51.97254" E
P29	24°25'03.18677" N	84°47'51.36353" E
P30	24°25'03.82955" N	84°47'51.47538" E
P31	24°25'04.20406" N	84°47'51.47639" E
P32	24°25'03.90918" N	84°47'50.62492" E
P33	24°25'04.08040" N	84°47'50.45478" E
P34	24°25'04.22159" N	84°47'50.24951" E

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P35	24°25'04.14034" N	84°47'50.22906" E
P36	24°25'03.67954" N	84°47'50.23331" E
P37	24°25'03.40824" N	84°47'50.14410" E
P38	24°25'03.39769" N	84°47'49.89260" E
P39	24°25'02.69303" N	84°47'49.89271" E
P40	24°25'02.65476" N	84°47'49.22862" E
P41	24°25'02.61473" N	84°47'48.84241" E
P42	24°25'02.91547" N	84°47'48.94613" E
P43	24°25'03.01436" N	84°47'48.57043" E
P44	24°25'03.26381" N	84°47'48.65554" E
P45	24°25'03.29056" N	84°47'48.45646" E
P46	24°25'03.40482" N	84°47'48.06571" E
P47	24°25'03.48186" N	84°47'47.88737" E
P48	24°25'03.55465" N	84°47'47.42358" E
P49	24°25'04.03547" N	84°47'47.37534" E
P50	24°25'03.99000" N	84°47'47.56092" E
P51	24°25'04.78456" N	84°47'47.66356" E
P52	24°25'05.05081" N	84°47'47.64484" E
P53	24°25'05.65990" N	84°47'47.84086" E
P54	24°25'04.25323" N	84°47'49.29767" E
P55	24°25'04.34345" N	84°47'49.44214" E
P56	24°25'04.22098" N	84°47'49.47554" E
P57	24°25'05.77801" N	84°47'50.01349" E
P58	24°25'05.34734" N	84°47'50.08787" E
P59	24°25'05.36268" N	84°47'50.36723" E
P60	24°25'05.65831" N	84°47'50.29732" E
P61	24°25'05.70778" N	84°47'50.32745" E

P62	24°25'05.71274" N	84°47'50.49074" E
P63	24°25'05.75699" N	84°47'50.51814" E
P64	24°25'05.85725" N	84°47'50.84884" E
P65	24°25'06.21610" N	84°47'51.57791" E
P66	24°25'06.35358" N	84°47'51.48456" E
P67	24°25'06.21292" N	84°47'51.04727" E
P68	24°25'05.92795" N	84°47'50.56872" E
P69	24°25'05.90236" N	84°47'50.40294" E
P70	24°25'06.07458" N	84°47'50.18582" E

LAND DETAILS

Khata no.	Plot no.
56, 31, 01, 82, 53,	29, 32, 33, 36, 38, 39, 40, 42, 53, 218,
61, 94, 66, 25 & 65	52, 54, 43, 55, 45 & 46

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LOI) has been issued by District Mining Officer, Chatra vide letter no. 777/Khanan, dated 12.07.2024.
2	CO	:	The CO, Hunterganj, Chatra vide letter no. 795, dated 04.10.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatriyan & Register II and also mentioned that the habitation of 3-4 houses at a distance of 150 meters of proposed project site, accordingly PAs has submitted EMP for the same.
3	DMO	:	DMO, Chatra vide memo no. 933, dated 29.08.2024 certified that 01 other mining lease area (5.27 Acre) exists within 500 meters radius from proposed project site and total area is 9.08 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 2855, dated 09.12.2023 certified that the proposed project site is outside Eco Sensitive Zone of Lawalong Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Chatra North Forest Division vide letter no. 2819, dated 07.12.2023 certified that the distance of reserved /

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		protected forest is more than 250 meters from proposed project site.
6	DSR	This project is mentioned in approved DSR of Chatra District (Sl. no. 05, Page no. 68).
7	Gram Sabha	BDO, Hunterganj (Chatra) vide letter no. 917, dated 10.10.2023 informed that Gram Sabha conducted on 07.10.2023.
8	Mine Plan Approval	Approved by District Mining Officer, Chatra vide Letter No. 1023/Khanan, dated 18.09.2024.
9	Qualified Person	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi-Mechanized Method	
2	Quarry Area	:	1.54 Ha	Life of Mine – 10 year
3	Waste Generation	:	17230 cum	
4	Stripping Ratio	:	0.81(08:09)	
5	Working Days	:	300	
6	Bench size	:	6 m x 6 m,	
7	Elevation of Mine	:	180m – 178m AMSL	
8	Ground Level Elevation	:	130- 135 AMSL	
9	Ultimate Working Depth	:	152 m AMSL	
10	Water Table	:	Post Monsoon – 140 m AMSL Pre Monsoon – 135.8m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	18.48 kg Slurry explosives/day	
13	Diesel/Fuel requirement	:	HSD –260 liters / day (78KL/year)	

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.
1st	21320	2.8	59696	71	199	7440	25








2nd	12920	2.8	36176	43	121	0	0
3rd	10440	2.8	29237	35	97	0	0
4th	12375	2.8	34650	41	116	4895	16
5th	11550	2.8	32340	39	108	4895	16
Total	68605	2.8	192094	71 Max.	199 Max.	17230	25

Land Use

Existing Land Use pattern

SL	Pattern	Existing Land Use (Ha)
1	Mining Area	0.00
2	Office	0.00
3	Dumping	0.00
4	Road	0.00
5	Garland drain	0.00
6	Settling Pond	0.00
7	Green belt/ Safety Zone	0.00
8	Stone Stock yards	0.00
9	G-M Land	0.00
10	Unutilized	1.54
	TOTAL	1.54

Land Use Pattern for Proposed Plan Period:

SL	Pattern	Proposed Land Use (Acres)
1	Mining Area	2.07
2	Office	0.01
3	Dumping	0.00
4	Road	0.06
5	Garland drain	0.09
6	Settling Pond	0.00
7	Safety Zone	1.40
8	Stone Stock Yards	0.00
9	G-M Land	0.09
10	Unutilized	0.09

	TOTAL	3.81

Land Use Pattern after Life of the Mine:

Sl	Pattern	Conceptual Stage Land Use (Acres)	Area to be converted in the conceptual period.
1	Mining Area	2.07	Water body
2	Office	0.01	Green Belt
3	Dumping	0.00	Green Belt
4	Road	0.06	Water body
5	Garland drain	0.09	-
6	Settling Pond	0.00	-
7	Safety Zone	1.40	Greenbelt
8	Stone Stock Yards	0.00	
9	G-M Land	0.09	
8	Unutilized	0.09	Greenbelt
	TOTAL	3.81	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.567 Ha	907
2	Along Approach Road	1.08 km	720
TOTAL			1627

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

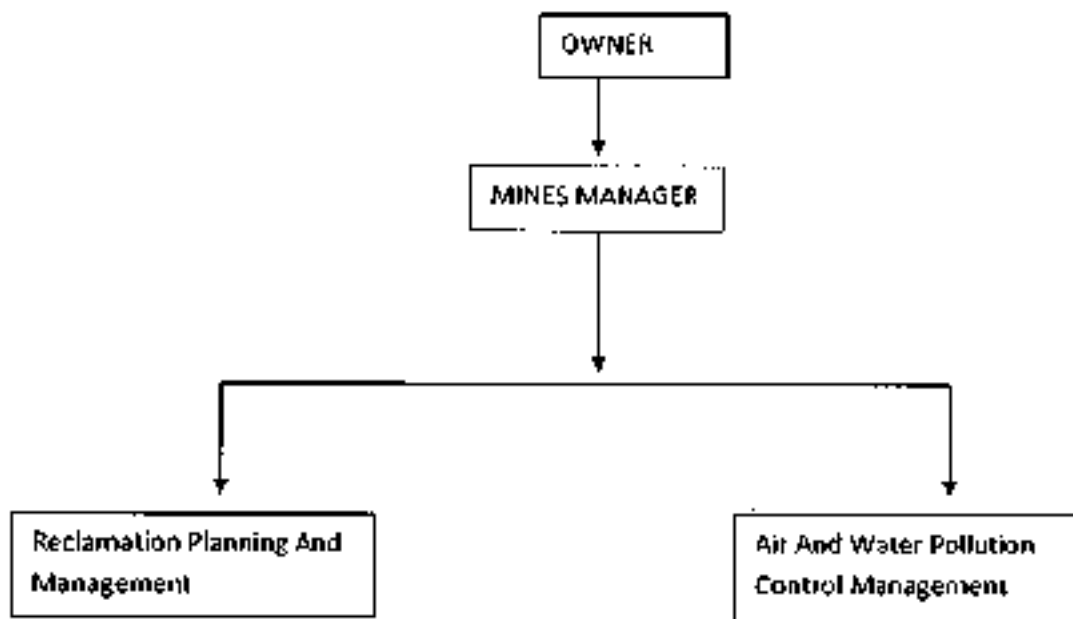
Budget for Environmental Management

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. (Rs. 1100 per Tanker)	--	3,30,000

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
2	Plantation $720 \times 800 = \text{Rs } 576000$ (Gabion Plantation along approach road) $907 \times 400 = 362800$ (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	9,38,800	9,3,880
3	Environmental Monitoring (One Day Monitoring) - Ambient Air 24 hrs (3 point) -Rs.27,270 - Ground Water (2 point) -Rs.12,420 - Noise 24 hrs (3 point) -Rs 21,000 - Soil (3 point) -Rs.40,920 Total -Rs. 1,01,610 (Per Season) At least two seasons in a Year -Rs. 1,01,610 x 2 = Rs. 2,03,220 Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022	--	2,03,220
Total		9,38,800	6,27,100

Environment Monitoring Programme:

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Water	2 stations	6 Monthly
3.	Noise	3 stations	6 Monthly
4.	Soil	3 stations	6 Monthly



Solid Waste Management

During first year 7440 cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced
- Optimum quantity of explosives would be used.
- Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

3076

Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on Haul road by using water Tankers.
- ✓ Regular repair of Haul road
- ✓ All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Hazard Identification & Risk Analysis in Stone Mining operation

S. No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily Injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed

- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department.

Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container

- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overtaking vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)








- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Hiring Stone Mine of M/s Maa Bhawani Stone Works (Prop. : Shri Sudhansu Ranjan), Village : Hiring, Thana : Hunterganj, Distt. : Chatra, Jharkhand (1.54 Ha.) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – It along with following specific conditions :

- i. In compliance of OM no.F.No. IA3-22/3/2024-(A.III) (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MenLiFE Portal (<https://merilife.nic.in>).

- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests. Summary findings of same to be submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

19. Dumrikalan Stone Mine of M/s Maa Bhawani Stone Works (Prop. : Shri Sudhansu Ranjan),
Village : Dumrikalan, Thana : Hunterganj, Distt. : Chatra, Jharkhand (1.258 Ha.).

(Proposal no.: SIA/3H/MIN/ 501014 /2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 25.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 49200 Cum. / annum or 137760 TPA

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Dumrikalan Stone Mine

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2	Lessee:	:	Maa Bhawani Stone Works Proprietor- Shri Sudhansu Ranjan
3	Lessee Address	:	S/O Ramnarayan Singh, R/o Village- Dumrikalan, Thana -Hunterganj, District-Chatra, Jharkhand
4	Lease Area	:	1.258 Ha
5	Type of Land	:	Non Forest Raiyati Land
6	Project Cost	:	Capital Cost: Rs. 100.48 Lakhs Recurring Cost: Rs 24.28 Lakhs
7	EMP Budget	:	Capital Cost: Rs. 4.976 Lakhs Recurring Cost: Rs5.829Lakhs
8	New or Expansion	:	New
9	Mineable Reserves	:	cum.: 248320 Tonnes 695296
10	Mine Life	:	10 years.
11	Man power	:	26 Person
12	Water Requirement	:	4.52 KLD (Drinking: 0.390 KLD, Dust Suppression: 1.292 KLD, Plantation: 2.844 KLD)
13	Water Source	:	From Nearby villages by tankers
14	DG Set / power	:	60 KVA D.G. Set proposed
15	Crusher	:	No crusher
16	Nearest Water Body	:	Amanat river – 50.75 Km in SE direction
17	Nearest Habitation	:	Bela Village – 0.230 Km in South direction
18	Nearest Rail Station	:	Ranchi Railway Station is 128.20 km (aerial distance) in SE direction
19	Nearest Air Port	:	Birsa Munda Airport (Ranchi) at 130.97 km South East direction.
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer NDC. letter no.- 2818 Dated- 07/12/2023
21	Road & Highways	:	A well motorable road is connected to the Mine Site which connects NH-22 at a distance of 0.7 km East Direction

CO-ORDINATES

1	Latitude	:	From 24°23'56.20798" N	To 24°23'56.01880" N
2	Longitude	:	From 84°48'13.83070" E	To 84°48'13.50439" E

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LAND DETAILS

Khata no.	Plot no.
81	106 (P) & 109

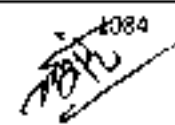
STATUTORY CLEARANCES

1	LOI / Lease docs	: The Letter of Intent (LoI) has been issued by District Mining Officer, Chatra vide letter no. 185/Khanan, dated 17.02.2024.
2	CO	: The CO, Hunterganj, Chatra vide letter no. 818, dated 13.10.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyon & Register II and also mentioned that the habitation of 3-4 houses at a distance of 150 meters of proposed project site, accordingly PAs has submitted EMP for the same.
3	DMO	: DMO, Chatra vide memo no. 932, dated 29.08.2024 certified that 01 other mining lease area (4.93 Acre) exists within 500 meters radius from proposed project site and total area is 8.04 Acre.
4	DFO Wild Life	: DFO, Wildlife Division, Hazaribag vide letter no. 2854, dated 09.12.2023 certified that the proposed project site is outside Eco Sensitive Zone of Lawalong Wildlife Sanctuary.
5	DFO Territorial	: Division Forest Officer, Chatra North Forest Division vide letter no. 2818, dated 07.12.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	: This project is mentioned in approved DSR of Chatra District (Sl. no. 01, Page no. 66).
7	Gram Sabha	: BDO, Hunterganj (Chatra) vide letter no. 910, dated 09.10.2023 informed that Gram Sabha conducted on 07.10.2023.
8	Mine Plan Approval	: Approved by District Mining Officer, Chatra vide Letter No. 1022/Khanan, dated 18.09.2024.
9	Qualified Person	: Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	: Opencast Semi-Mechanized Method	
2	Quarry Area	: 1.258 Ha	Life of Mine – 10 year








3	Waste Generation	:	18800 cum
4	Stripping Ratio	:	01:02
5	Working Days	:	300
6	Bench: size	:	6 m x 6 m,
7	Elevation of Mine	:	180m – 178m AMSL
8	Ground Level Elevation	:	180 AMSL
9	Ultimate Working Depth	:	142 m AMSL
10	Water Table	:	Post Monsoon – 133 m AMSL Pre Monsoon – 18.8m AMSL
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	18.48 kg Slurry explosives/day
13	Diesel/Fuel requirement	:	HSD –80 liters / day (24KL/year)

Production Details

SUMMARY OF YEARWISE OF PRODUCTION									
Year	Production of stone /year			Per day production		Removal of D.B		Removal of Top Soil	
Years	Cum/Year	T.F	Tons/Year	Cum / day	Tons /Day	O.B Production In Cum/Year	O.B production per day cum	Top Soil In Cum/Year	Per day cum
1 st	49200	2.8	137760	164	459	18800	62.67	5640	18.8
2 nd	24800	2.8	69440	83	231	0	0	0	0
3 rd	24800	2.8	69440	83	231	0	0	0	0
4 th	22400	2.8	62720	75	209	0	0	0	0
5 th	22400	2.8	62720	75	209	0	0	0	0
Total	143600	2.8	402080	164 Max.	459 Max.	18800	62.67	5640	18.8

Land Use

Existing Land Use pattern

SL	Pattern	Existing Land Use (Ha)
1	Mining Area	0.00
2	Office	0.00
3	Dumping	0.00
4	Road	0.00

5	Garland drain	0.00
6	Settling Pond	0.00
7	Green belt/ Safety Zone	0.00
8	Stone Stock yards	0.00
9	G-M Land	0.00
10	Unutilized	1.258
	TOTAL	1.258

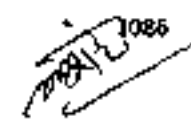
Land Use Pattern for Proposed Plan Period:

SL	Pattern	Proposed Land Use (Acres)
1	Mining Area	1.83
2	Office	0.01
3	Dumping	0.13
4	Road	0.06
5	Garland drain	0.06
6	Settling Pond	0.00
7	Safety Zone	1.01
8	Stone Stock Yards	0.00
9	G-M Land	0.00
10	Unutilized	3.11
	TOTAL	3.11

Land Use Pattern after Life of the Mine:

SL	Pattern	Conceptual Stage Land Use (Acres)	Area to be converted in the conceptual period.
1	Mining Area	1.83	Water body








2	Office	0.01	Green Belt
3	Dumping	0.13	Green Belt
4	Road	0.06	Water body
5	Garland drain	0.06	-
6	Settling Pond	0.01	-
7	Safety Zone	1.01	Greenbelt
8	Stone Stock Yards	0.00	
9	G-M Land	0.00	
10	Unutilized	3.11	Greenbelt
	TOTAL	3.11	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.408 Ha	652
2	Along Approach Road	223 m	296
TOTAL			948

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

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Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
2	Plantation 296 X 800 – Rs 236800 (Gabion Plantation along approach road) 652 X 400 = 260800 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	497600	49760
3	Environmental Monitoring (One Day Monitoring) Ambient Air (3 points) 24 hrs -Rs.27270 Ground Water (2 point) -Rs.12420 Noise (3 points) 24 hrs - Rs.21000 Soil (3 points) - Rs. 40920 Total -Rs. 1,01,610 (Per Season) At least two season in a Year -Rs. 1,01,610 x 2 = Rs2,03,220 Source : Central Pollution Control Board Notification ,New Delhi, the 23rd February, 2022	--	2,03,220
Total		4,97,600	5,82,980

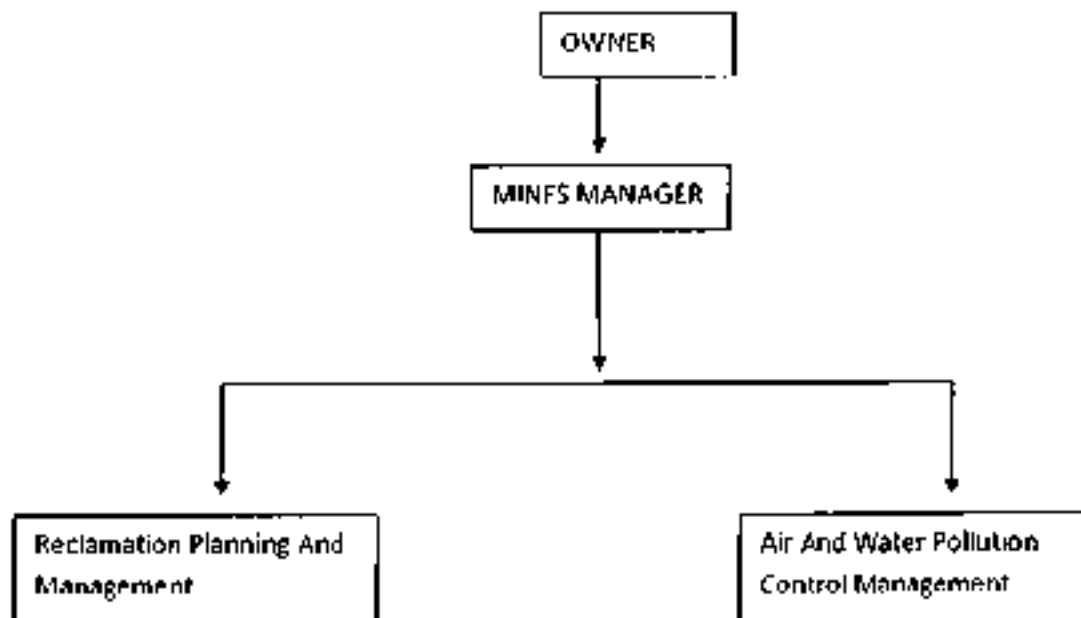
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Use of Sharp Drill Bits

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Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

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2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed

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- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

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Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

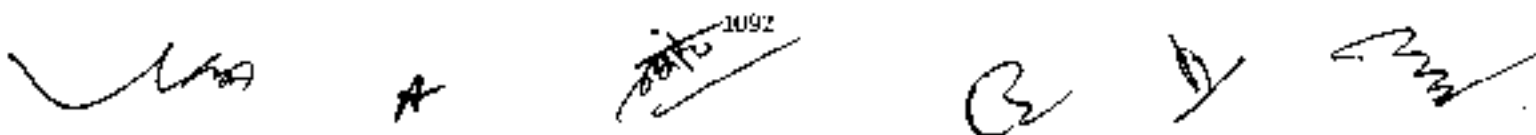
Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department.

Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.

 1092

- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.

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- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

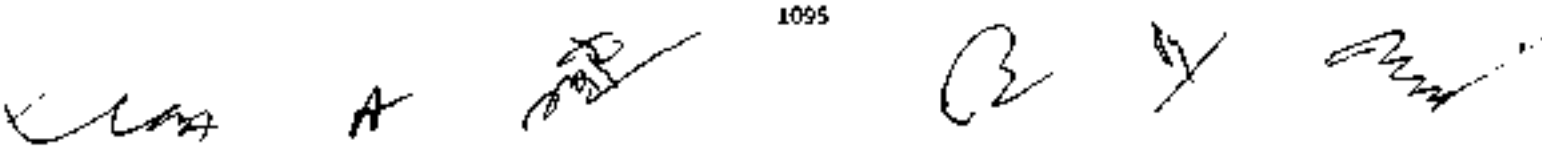
- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.

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- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Dumrikalan Stone Mine of M/s Maa Bhawani Stone Works (Prop. : Shri Sudhansu Ranjan), Village : Dumrikalan, Thana : Hunterganj, Distt. : Chatra, Jharkhand (1.258 Ha.) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Peri Mo Ke Nam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to be submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.



20. Bichlidag Stone Deposit of Smt. Rita Devi, Village : Bichlidag, P.O. + P.S. : Manika, Distt.: Latehar, Jharkhand (0.97 Ha).

(Proposal no.: SIA/JH/MIN/493436/2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC) (re-appraisal of Environment Clearance issued by DEIAA, Latehar).

The project has been granted EC by DEIAA, Latehar vide letter no. 29/EC/DEIAA/ 2017 / Latehar dated 22.04.2017.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

This is re-appraisal of the EC Issued by DEIAA, Latehar which has been taken up for consideration on 25.10.2024. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B2.

Existing baseline condition as per monitoring report submitted by PP is as follows PM₁₀ -96 $\mu\text{g}/\text{m}^3$ PM_{2.5} -567 $\mu\text{g}/\text{m}^3$ SO₂ -18.2 NO₂ - 19.0 $\mu\text{g}/\text{m}^3$. All the data are within the permissible limit

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

As per certified compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

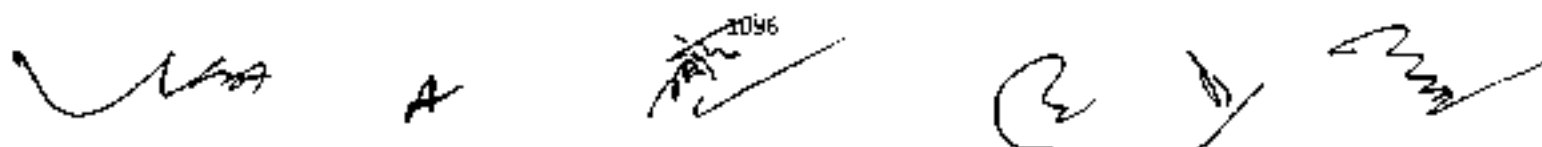
Production detail as per letter no. 750/M dated 22.08.2024 by DMO, Latehar is within the permissible limit of EC.

The compliance report of previous EC has been certified by JSPCB, Regional Office, Dhurwa vide letter no. 1004, dated 20.08.2024.

EC Application for Proposed Annual Capacity: 67 TPD (Avg.) / 20,100 TPA (Avg.)

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Bichlidag Stone Mine
2	Lessee:	Smt. Rita Devi
3	Lessee Address	Smt. Rita Devi Vill.- Banpur, P.O -Latehar Dist.- Latehar, Jharkhand Pin-829206
4	Lease Area	0.97 Ha
5	Type of Land	Non-Forest Raiyati Land



6	Project Cost	:	Capital Cost – 106.92 Lakhs	Recurring Cost – 5.355 Lakhs
7	EMP Budget	:	Capital: 8.968 Lakhs	Recurring: 5.78Lakhs
8	New or Expansion	:	New (Re-appraisal of DEIAA EC)	
9	Mineable Reserves (remaining)	:	2,02,078 Tons	
10	Mine Life	:	10 Years	
11	Man power	:	25Person	
12	Water Requirement	:	8.79 KLD Drinking: 0.39 KLD Dust Suppression: 4.80 KLD Plantation: 3.60 KLD	
13	Water Source	:	From Nearby villages by tankers	
14	D.G. Set / power	:	20 KVA D.G. Set proposed	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	SukriRiver –1.5km – W direction	
17	Nearest Habitation	:	Dundu– 0.80 km In the NE direction	
18	Nearest Rail Station	:	Latehar Railway Station is at areal distance of 10 km S direction (aerial distance).	
19	Nearest Air Port	:	Rachi Airport is at aerial distance of 104 km SE direction (aerial distance).	
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer NOC. Letter no – 773 Dt- 01/04/2016 Nearest Forest is about 2.8 km (aerial distance) away from the ML area (SE direction)	
21	Road & Highways	:	NH-139 at 5.26 km (aerial distance) W Direction.	

CO-ORDINATES

Point ID	Latitude	Longitude
1	23° 49' 24.33699111" N	084° 26' 35.16751966" E
2	23° 49' 24.04572045" N	084° 26' 35.15000575" E
3	23° 49' 23.74694785" N	084° 26' 35.19744121" E
4	23° 49' 23.45737915" N	084° 26' 35.32133980" E
5	23° 49' 23.24995649" N	084° 26' 35.37713893" E
6	23° 49' 23.20179407" N	084° 26' 35.33974759" E








7	23° 49' 23.13807479" N	084° 26' 35.34187156" E
8	23° 49' 21.69571823" N	084° 26' 35.79967685" E
9	23° 49' 19.81548173" N	084° 26' 36.42580412" E
10	23° 49' 19.01771627" N	084° 26' 36.20235590" E
11	23° 49' 18.30861814" N	084° 26' 36.08635048" E
12	23° 49' 17.88875185" N	084° 26' 36.02796686" E
13	23° 49' 17.70151314" N	084° 26' 36.00858585" E
14	23° 49' 17.42360683" N	084° 26' 36.01066503" E
15	23° 49' 17.29393664" N	084° 26' 36.11673883" E
16	23° 49' 16.63963440" N	084° 26' 36.10215470" E
17	23° 49' 16.41136047" N	084° 26' 34.64649350" E
18	23° 49' 16.36824125" N	084° 26' 34.40535472" E
19	23° 49' 18.29536676" N	084° 26' 34.37903983" E
20	23° 49' 20.74310592" N	084° 26' 34.34561595" E
21	23° 49' 22.80215063" N	084° 26' 34.31749970" E
22	23° 49' 24.29277470" N	084° 26' 34.29714523" E

LAND DETAILS

Khata no.	Plot no.
65	256 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	: i. The Letter of Intent (LoI) has been issued by Assistant Mining Officer, Latehar vide letter no. 963/M, dated 07.10.2016. ii. Lease Deed- 13.10.2017 to 12.10.2027
2	CO	: The CO, Manika vide letter no. 335, dated 10.08.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyar.
3	DMD	: DMD, Latehar vide memo no 734/M, dated 27.06.2023 certified








		that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	Deputy Director, Palamau Tiger Project, South Division, Medininagar vide letter no. 290, dated 30.03.2024 certified that the proposed project site is outside Eco Sensitive Zone of Palamau Tiger Reserve.
5	DFO Forest Distance	Division Forest Officer, Latehar Forest Division vide letter no. 773 dated 01.04.2016 certified that the distance of forest land is 280 meter from proposed project site.
6	DSR	This project is mentioned in approved DSR of Latehar District (SI. no. 3, Page no. 54).
7	Gram Sabha	Gram Sabha conducted on 14.08.2016.
8	Mine Plan Approval	i. Approved by Assistant Mining Officer, Ranchi vide Memo No. 345/M, dated 16.03.2022. ii. Approved by DMO, Latehar vide letter no. 458/M, dated 06.06.2024
9	Previous Environmental Clearance (EC)	Previous EC granted by DEIAA, Latehar vide letter no. 29/EC/DEIAA/2017/Latehar dated 22.04.2017.
10	Compliance report of EC	EC compliance report certified by JSPCB, Regional Office, Dhurwa vide letter no. 1004, dated 20.08.2024.
11	Consent to Establish (CTE)	CTE Issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-1872481 /2017 /710, dated 22.11.2017.
12	Consent to Operate (CTO)	CTO issued by JSPCB/RO/RNC/CTO-14757109/2022 /253, dated 15.12.2022.
13	Production Report	Production report Issued by DMO, Latehar vide letter no. 750/M dated 22.08.2024.
9	Qualified Person	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	Opencast Mechanized Method
2	Quarry Area	0.97 Ha
3	Waste Generation	1,900cum of O.B.

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4	Stripping Ratio	:	10:07
5	Working Days	:	300
6	Bench: size	:	6 m x 6 m,
7	Elevation of Mine	:	371m–350m AMSL
8	Ground Level Elevation	:	350 AMSL
9	Ultimate Working Depth	:	361 m AMSL
10	Water Table	:	Post Monsoon – 338 m AMSL Pre Monsoon – 333m AMSL
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	8.38 kg/day slurry explosives
13	Diesel/Fuel requirement	:	HSD – 700 liters / day (210 KL/year)

Production Details (As per DEIAA EC)

SUMMARY OF YEARWISE PRODUCTION

Year	Production of Stone / Year	Per Day Production	Intercalated waste and Soil	
	Tonnes	Tonnes	Generation of Intercalated Waste Cum	Removal of Soil (Cum.)
1 st Year	20200	67.33	380	300
2 nd Year	20197	67.32	380	1066
3 rd Year	20219	67.39	380	1066
4 th Year	20237	67.45	380	1066
5 th Year	20197	67.32	380	1066
Total	101050	67 (Avg.)	1900	5012








Land Use

Land Use pattern (Existing, Proposed & at the Conceptual Stage i.e. end of mine)

SL	Pattern	Existing Land Use (Ha)	Proposed Current Plan Period (Ha)	Proposed Land Use at End of Life of Mine (Ha)	Land Usage at Conceptual Stage
1	Mining Area	0.301	0.510	0.510	Water Body
2	Office /Store	0.000	0.000	0.000	
3	Dump Yard	0.000	0.025	0.025	plantation
4	Garland Drain	0.000	0.033	0.033	Garland Drain
5	Safety Zone	0.000	0.401	0.401	Plantation
6	Settling Tank	0.000	0.001	0.001	Settling Tank
7	Unutilized	0.669	0.000	0.000	Plantation
8	Crusher	0.000	0.000	0.000	
	TOTAL	0.970	0.970	0.970	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.401 Ha	642
2	Along Approach Road	600 m	800
TOTAL			1,442

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

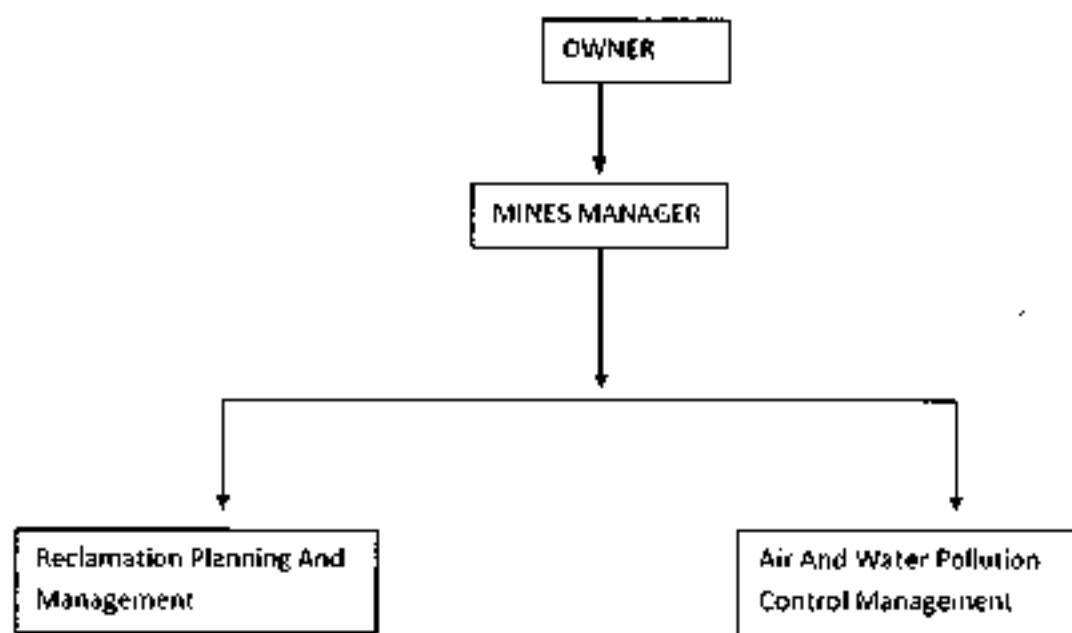
Budget for Environmental Management

Sl. No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering	--	3,00,000

Sl. No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
	plants etc. (Rs. 1000 per Tanker)		
2	Plantation 800 X 800 = Rs 6,40,000 (Gablon Plantation along approach road) 400 X 642 = Rs.2,56,800 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	8,96,800	1,44,200
3	Environmental Monitoring (One Day Monitoring) Ambient Air 24 hrs -Rs.27,270 Ground Water -Rs. 18,630 Noise 24 hrs - Rs.21,000 Total -Rs. 66,900 (Per Season) At least two seasons in a Year -Rs. 66,900x2 = Rs. 1,33,800	--	1,33,800
Total		8,96,800	5,78,000

Environment Monitoring Plan (post operation)

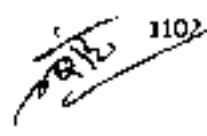
Environment management cell



FUNCTIONS OF ENVIRONMENT MONITORING CELL

- Supervision: Managed by Mines Manager with a qualified technical team.








- **Personnel:** Includes skilled, semi-skilled, unskilled, and other third parties.
- **Responsibilities:**
 - ✓ Implement environmental control measures.
 - ✓ Oversee reclamation planning and management.
 - ✓ Manage air and water pollution control.
 - ✓ Liaise with state and central statutory agencies.
 - ✓ Develop greenbelt areas
- **Performance Review:** Assess corporate environmental performance and report non-compliances.
- **Remedial Actions:** Suggest and implement actions for exceeding pollution limits.
- **Coordination:**

Collect health statistics for workers and local population.

Act as a bridge for project implementation and Project Authorities

Facilitate afforestation efforts.

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx in the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly

Solid Waste Management

There is 2940 Cum. O.B. will be generated in mining plan period in which 1,800 Cum. O.B. will be used in maintenance of approach road & haul road respectively. Remaining 1,140 Cum. O.B. will be used in backfilling.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.

- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced
- Optimum quantity of explosives would be used.
- Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on Gaur road by using water Tankers.
- ✓ Regular repair of Haul road
- ✓ All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

The hazard Identification and risk analysis is done using qualitative method.

Hazard Identification & Risk Analysis in Stone Mining operation

S. No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20

7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted

by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks /ippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge

of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report Issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.

- I. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Bichildag Stone Deposit of Smt. Rita Devi, Village : Bichildag, P.O. + P.S. : Manika, Distt.: Latehar, Jharkhand (0.97 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- I. During appraisal of the project it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC.
- II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).
- III. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to be submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.



21. Dundu Stone Mine of Shri Ashok Prasad, Village : Dundu, Thana : Manika Distt. : Latehar, Jharkhand (2.096 Ha).

(Proposal No : SIA/JH/MIN/ 501851/2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is an expansion project which has been taken for appraisal on 25.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

The project authorities have submitted certified compliance report of the conditions of the previous EC vide letter dated 25.10.2023 issued by RO, JSPCB, Ranchi.

However, vide OM no. J-11013/6/2010-IA.II (Part) Dated 07.09.2017 issued by MoEF&CC, Govt. of India states that the project authorities are to request Regional Office of MoEF&CC, Govt. of India for issuance of certified compliance report. The above OM further states that if the CCR is not issued by the Regional Office, MoEF&CC, Govt. of India within one month from the date request, the project authorities may obtain CCR from JSPCB.

The project authorities have not requested the Regional Office, MoEF&CC, Govt. of India for Issuance of CCR and directly obtained CCR from JSPCB.

Hence, the project authorities are required to obtained the CCR as required by OM no. J-11013/6/2010-IA.II (Part) Dated 07.09.2017 issued by MoEF&CC, Govt. of India.

Project will be taken up for consideration after a fresh CCR is obtained in compliance with OM no. J-11013/6/2010-IA.II (Part) Dated 07.09.2017 issued by MoEF&CC, Govt. of India.

22. Jitalpur Stone Mine of Md. Maniruzzaman, Village : Jitalpur, Thana : Littipara, Distt.: Pakur, Jharkhand (2.91 Ha).

(Proposal no.: SIA/JH/MIN/498463 /2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 24.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 66,632 Cum. / annum or 1,93,233 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Jitalpur Stone Mine
2	Lessee:	: Proponent- Md. Maniruzzaman
3	Lessee Address	: S/O MD. IkramulHaq R/o: VIII- Jampur, Thana - Barharwa, Sahibganj
4	Lease Area	: 2.91 Ha
5	Type of Land	: Non Forest Raiyati Land
6	Project Cost	Capital Cost: Rs. 133.48 Lakhs Recurring Cost: Rs. 6.05 Lakhs
7	EMP Budget	Capital Cost: Rs. 6.552 Lakhs Recurring Cost: Rs. 1.993 Lakhs
8	New or Expansion	: New
9	Mineable Reserves	: cum.: 6,46,768 cum Tonnes: 18.75,627.2 tons
10	Mine Life	: 10 years.
11	Man power	: 24 Person
12	Water Requirement	: 6.05 KLD (Drinking: 0.360 KLD, Dust Suppression: 2.03 KLD, Plantation: 3.66 KLD)
13	Water Source	: From Nearby villages by tankers
14	DG Set / power	: 60 KVA D.G. Set proposed
15	Crusher	: No crusher
16	Nearest Water Body	: Turai Nadi – 2.66 Km In West direction
17	Nearest Habitation	: Barasarsa Village – 1.21 Km In NE Direction
18	Nearest Rail Station	: Tilbhita Railway Station is at areal distance of 20.31 km East direction.
19	Nearest Air Port	: Deoghar Airport is at areal distance of 97.73 km SW direction.
20	Nearest Forest	: More than 250 m, as per Division Forest Officer NOC. letter no.- 292 Dated- 15/02/2024
21	Road & Highways	: A well motorable road is connected to the mine site at a distance of 0.210 Km North direction, this road connects to a village road, after 2.84 km it is connected to SH 18 (Dumka – Sahibganj).

CO-ORDINATES

Point Name	Latitude	Longitude
1	24° 39' 29.20012783" N	087° 38' 26.60082839" E

2	24° 39' 29.99296215" N	087° 38' 27.44313095" E
3	24° 39' 30.49312833" N	087° 38' 28.13289854" E
4	24° 39' 30.99329394" N	087° 38' 28.82266613" E
5	24° 39' 31.24628716" N	087° 38' 29.55907275" E
6	24° 39' 31.49928023" N	087° 38' 30.29547938" E
7	24° 39' 31.07896693" N	087° 38' 31.33360336" E
8	24° 39' 30.75561171" N	087° 38' 31.90332265" E
9	24° 39' 30.21794352" N	087° 38' 32.36458358" E
10	24° 39' 29.79985902" N	087° 38' 32.73452621" E
11	24° 39' 29.46638505" N	087° 38' 33.13600925" E
12	24° 39' 29.25678506" N	087° 38' 33.55716052" E
13	24° 39' 29.03599890" N	087° 38' 34.03257445" E
14	24° 39' 28.83098931" N	087° 38' 34.27226246" E
15	24° 39' 28.41178865" N	087° 38' 34.47281069" E
16	24° 39' 27.84445032" N	087° 38' 34.55439051" E
17	24° 39' 27.05161221" N	087° 38' 34.88529508" E
18	24° 39' 26.84589206" N	087° 38' 35.11436556" E
19	24° 39' 26.51418916" N	087° 38' 35.84754668" E
20	24° 39' 26.11342213" N	087° 38' 36.11814882" E
21	24° 39' 25.99502843" N	087° 38' 35.89331289" E
22	24° 39' 25.85318465" N	087° 38' 35.44973230" E
23	24° 39' 25.67401350" N	087° 38' 34.94865052" E
24	24° 39' 25.45915734" N	087° 38' 34.55353521" E
25	24° 39' 25.59293853" N	087° 38' 34.50621995" E
26	24° 39' 25.39943358" N	087° 38' 33.92792229" E
27	24° 39' 25.59532748" N	087° 38' 33.86746390" E
28	24° 39' 25.76972077" N	087° 38' 33.75706162" E
29	24° 39' 25.18442797" N	087° 38' 33.32070974" E
30	24° 39' 24.64004527" N	087° 38' 32.89914389" E
31	24° 39' 24.73769378" N	087° 38' 32.21142969" E
32	24° 39' 25.12709313" N	087° 38' 31.46752860" E
33	24° 39' 25.55829876" N	087° 38' 30.68945539" E
34	24° 39' 25.91640457" N	087° 38' 30.28622436" E
35	24° 39' 26.46435364" N	087° 38' 29.66922714" E
36	24° 39' 26.32970344" N	087° 38' 29.34386392" E
37	24° 39' 26.74403601" N	087° 38' 29.14260976" E
38	24° 39' 26.84235742" N	087° 38' 29.35871361" E
39	24° 39' 27.08871709" N	087° 38' 29.22728233" E
40	24° 39' 27.65703588" N	087° 38' 28.51756485" E
41	24° 39' 28.22535395" N	087° 38' 27.80784737" E
42	24° 39' 28.72024643" N	087° 38' 27.18982328" E

LAND DETAILS

Khata no.	Plot no.
24	953 (P), 954 (P), 955, 956,

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by DMO, Pakur vide memo no. 1463/M, dated 09.09.2024.
2	CO	:	The CO, Littipara vide letter no. 85/Ra. dated 26.02.2024 has mentioned the plot no. of the project is not recorded as "Jungle Jhari" in R.S. Khatlyan & Register II.
3	DMO	:	DMO, Pakur vide memo no. 1544/M, dated 19.09.2024 certified that no other mining lease area exists within 500 meters radius from proposed project site.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no.: 750, dated 13.04.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	DFO, Pakur Forest Division vide letter no. 292, dated 15.02.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 1545/M, dated 19.09.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 55, Page no. 82).
7	Gram Sabha	:	BDO, Littipara vide letter no. 316/Ra., dated 11.03.2024 informed that Gram Sabha conducted on 10.03.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 1595/M, dated 25.09.2024.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi-Mechanized Method	
2	Quarry Area	:	2.91 Ha	Life of Mine – 10 year
3	Waste Generation	:	71,485 cum	
4	Stripping Ratio	:	0.93	
5	Working Days	:	300	
6	Bench: size	:	6 m x 6 m,	
7	Elevation of Mine	:	98m-82m AMSL	

8	Ground Level Elevation	:	82 AMSL
9	Ultimate Working Depth	:	39 m AMSL
10	Water Table	:	Post Monsoon – 16.18 m AMSL Pre Monsoon – 10m AMSL
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	68.904 kg Slurry explosives/day
13	Diesel/Fuel requirement	:	HSD – 288liters / day (86.4 KL/year)

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.
1st	66632	2.9	193233	222	644	71485	238
2nd	63337	2.9	183677	211	612	0	0
3rd	63630	2.9	184527	212	615	0	0
4th	56173	2.9	162902	187	543	0	0
5th	52193	2.9	151360	174	505	0	0
Total	301965	2.9	875699	222 (max)	644 (max)	71485	238

Land Use

Existing Land Use pattern

SL	Pattern	Existing Land Use (Ha)
1	Mining Activities	0.00
2	Offices/ Store etc.	0.00
3	Dumping	0.00
4	Garland drain	0.00
5	Settling Tank	0.00
6	Safety Zone	0.00

7	Stone Stock yards	0.00
8	Green Belt	2.91
	TOTAL	2.91

Land Use Pattern for Proposed Plan Period:

SL	Pattern	Proposed Land Use (Acres)
1	Mining Activities	5.60
2	Offices/ Store etc.	0.00
3	Dumping	0.25
4	Garland drain	0.09
5	Settling Tank	0.00
6	Safety Zone	1.24
7	Stone Stock yards	0.00
8	Green Belt	0.00
	TOTAL	7.18

Land Use Pattern after Life of the Mine:

SL	Pattern	Conceptual Stage Land Use (Acres)	Area to be converted in the conceptual period.
1	Mining Activities	5.60	Water body
2	Offices/ Store etc.	0.00	Green Belt
3	Dumping	0.25	Green Belt
4	Garland drain	0.09	Water body
5	Settling Tank	0.00	-
6	Safety Zone	1.24	-
7	Stone Stock yards	0.00	Greenbelt
8	Green Belt	0.00	Greenbelt
	TOTAL	7.18	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.502 Ha	803
2	Along Approach	0.362m	418

	Road		
TOTAL			1,221

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

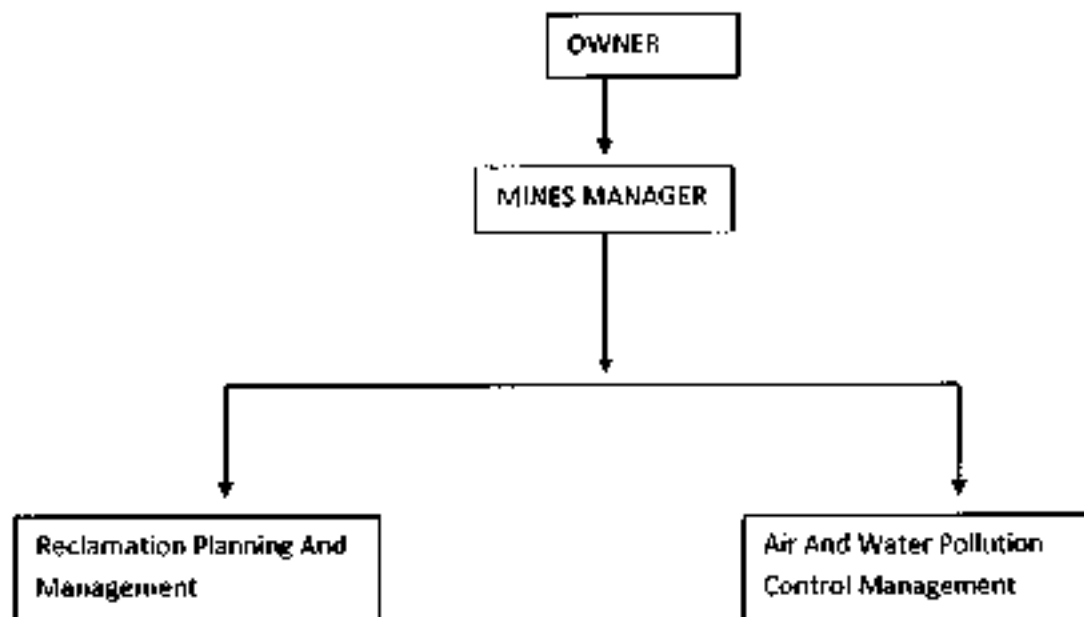
Budget for Environmental Management

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. (Rs. 1000 per Tanker)	—	3,00,000
2	Plantation 418 X 800 = Rs3,34,000 (Gabion Plantation along approach road) 937 X 400 = 3,21,200 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	6,55,200	65,520
3	Environmental Monitoring (One Day Monitoring) • Air 24 hrs -Rs. 27,270 • Ground Water -Rs. 18,630 • Noise 24 hrs -Rs. 21,000 Total -Rs. 66,900 (Per Season) At least two seasons in a Year -Rs. 66,900 x 2 = Rs. 1,33,800 <i>Source: CPCB Notification, New Delhi 23 Feb 2022</i>	--	1,33,800
Total		6,55,200	1,99,320

Environment Monitoring Programme

SL No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly

2.	Water	3 stations	6 Monthly
3.	Noise	3 stations	6 Monthly



Solid Waste Management

During first year 71485cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced
- Optimum quantity of explosives would be used.
- Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on Haul road by using water Tankers.
- ✓ Regular repair of Haul road
- ✓ All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Hazard Identification & Risk Analysis In Stone Mining operation

S. No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

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Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the

drill hole continuously and discharges the same in a dust collector specially provided for the purpose.

- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

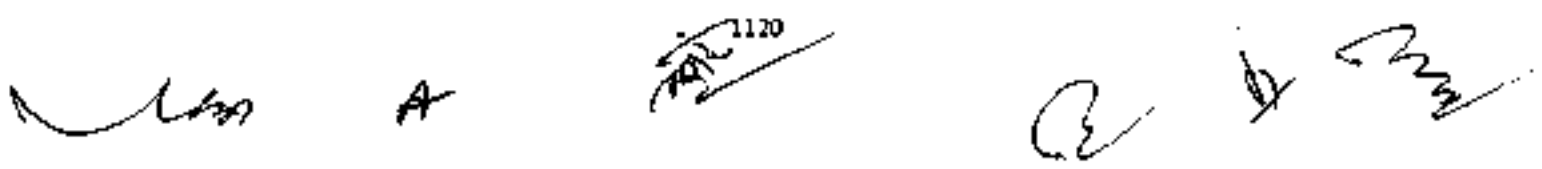
Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the

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weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.

- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site.

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are.

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area,

utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

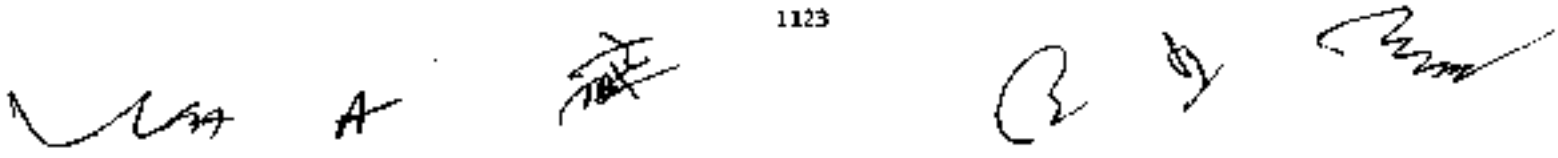
Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.

- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Jitalpur Stone Mine of Md. Maniruzzaman, Village : Jitalpur, Thana : Uttipara, Distt.: Pakur, Jharkhand (2.91 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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23. Gamaheriya Stone Deposit of Md. Noorujjaman Shekh, Village : Gamaheriya, Thana : Hiranpur, Distt.: Pakur, Jharkhand (2.69 Ha).

(Proposal no.: SIA/JH/MIN/501803 /2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 24.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 46,200 Cum. / annum or 1,24,740 TPA.

Project and Location Details:

Sl	Parameter	Details	
1	Project Name	Gamaheriya Stone Mine	
2	Lessee:	Proponent- Md. Noorujjaman Shekh	
3	Lessee Address	S/o Manjur Shekh Village/P.O-Rahaspur, Panchayat-Rahaspur, Thana-Pakur, Dist-Pakur, Jharkhand-816107.	
4	Lease Area	2.691 Ha	
5	Type of Land	Non Forest Ralyati Land	
6	Project Cost	Capital Cost: Rs. 79.19 Lakhs	Recurring Cost: Rs. 7.66 Lakhs
7	EMP Budget	Capital Cost: Rs. 7.33 Lakhs	Recurring Cost: Rs. 5.765 Lakhs
8	New or Expansion	New	
9	Mineable Reserves	cum.: 4,36,880 cum	Tonnes: 11,79,576 tons
10	Mine Life	10 years.	
11	Man power	20 Person	
12	Water Requirement	6.25 KLD (Drinking: 0.30 KLD, Dust Suppression: 1.64 KLD, Plantation: 4.30 KLD)	
13	Water Source	From Nearby villages by tankers	
14	DG Set / power	60 KVA D.G. Set proposed	
15	Crusher	No crusher	
16	Nearest Water Body	Ranipur River (Pargana Nadi) at 7 Km in North direction	
17	Nearest Habitation	Gamaheriya Village – 0.321 Km in SW Direction	

18	Nearest Rail Station	:	Pakur Railway Station is at areal distance of 20 km NE direction
19	Nearest Air Port	:	Deoghar Airport is at areal distance of 102.83 km SW direction.
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer NOC. letter no. 828 Dated- 08/06/2024 Protected Forest are present in 0.884 km NW direction
21	Road & Highways	:	This PWD road is connected to Pakur- Maheshpur Road at Telapara, Which is passing at a distance of about 1.50km from the applied lease area.

CO-ORDINATES

Point Name	Latitude	Longitude
1	24°37' 28.7272" N to 24°37'33.9664" N	87°42' 07.8442" E to 87°42' 18.7447" E

LAND DETAILS

Khata no.	Plot no.
18	824 & 845
29	825 & 844 (P)
09	830
07	833 & 834
21	842

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by DMO, Pakur vide memo no. 1471/M, dated 09.09.2024.
2	CO	:	The CO, Hiranpur vide letter no. 302/Ra. dated 20.06.2024 has mentioned the plot no. of the project is not recorded as "Jungle Jhari" in R.S. Khatiyan & Register II and also mentioned that the habitation of 12 houses within 500 meters of proposed project site, accordingly PAs has submitted EMP for the same.
3	DMO	:	DMO, Pakur vide memo no. 1498/M, dated 12.09.2024 certified that no other mining lease area exists within 500 meters radius

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		from proposed project site.
4	DFO Wild Life	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no.: 1455, dated 01.07.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	DFO, Pakur Forest Division vide letter no. 828, dated 08.06.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	The DMO, Pakur has been certified vide memo no. 1648/M, dated 28.09.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 102, Page no. 119).
7	Gram Sabha	BDO, Hiranpur vide letter no. 599/Vt., dated 02.07.2024 informed that Gram Sabha conducted on 26.06.2024.
8	Mine Plan Approval	Approved by District Mining Officer, Pakur vide Memo No. 1623/M, dated 26.09.2024.
9	Qualified Person	Shri Sahadev Singh was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi-Mechanized Method	
2	Quarry Area	:	2.691 Ha	Life of Mine – 10 year
3	Waste Generation	:	38,390 cum	
4	Stripping Ratio	:	05:09	
5	Working Days	:	300	
6	Bench: size	:	6 m x 6 m,	
7	Elevation of Mine	:	94m – 47m AMSL	
8	Ground Level Elevation	:	47 AMSL	
9	Ultimate Working Depth	:	12 m AMSL	
10	Water Table	:	Post Monsoon – 11 m AMSL	Pre Monsoon – 17.2 m AMSL
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	90 kg Slurry explosives/day	
13	Diesel/Fuel requirement	:	HSD – 232 liters / day (69.6 KL/year)	

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.
1st	44700	2.7	120690	149	402	21450	72.5
2nd	45930	2.7	124011	153	413	5600	18.6
3rd	45430	2.7	122661	151	408	0	0
4th	45220	2.7	122094	150	406	11340	37.8
5th	46200	2.7	124740	154	415	0	0
Total	227480	2.7	614196	758 (max)	2047 (max)	38390	127.9

Land Use pattern

SL	Pattern of Utilization	Existing Land Use (Ha)	Proposed Land Use (Ha)	Conceptual Land Use (Ha)
1	Excavation	Nil	1.580	2.045 (0.230 Ha Backfilled, 1.295 converted in to water reservoir & 0.520Ha shall be left as dead benches)
2	Waste Dump	Nil	0.210	Comes under mining
3	Road	Nil	0.027	Comes under mining
4	Crusher	Nil	Comes under mining	Comes under mining
5	Plantation (Green Belt)	Nil	0.646 (Within safety zone)	0.646 (Within safety zone)
	TOTAL	Nil	2.463	2.691

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.646 Ha	1033
2	Along Approach Road	0.300m	400
TOTAL			1433

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Budget for Environmental Management

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. (Rs. 1000 per Tanker)	--	3,00,000
2	Plantation 400 X 800 = Rs 3,20,000 (Gabion Plantation along approach road) 1033 X 400 = 4,13,200 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	7,33,200	73,320
3	Environmental Monitoring (One Day Monitoring) - Ambient Air 24 hrs (3 point) Rs 27,270 - Ground Water (2 point) Rs.12,420 - Noise 24 hrs (3 point) Rs.21,000 - Soil (3 point) Rs.40,920 Total -Rs. 1,01,610 (Per Season) At least two seasons in a Year -Rs. 1,01,610 x 2 = Rs. 2,03,220 Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022	--	2,03,220
Total		7,33,200	5,76,540

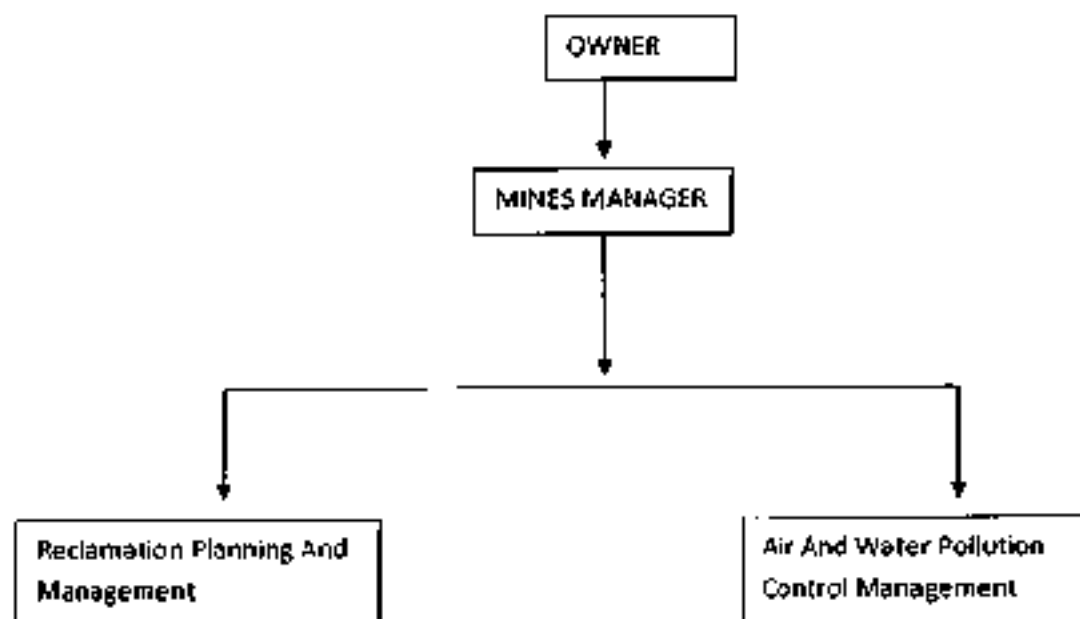
Environment Monitoring Programme

SL No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Water	2 stations	6 Monthly

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DATE

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3.	Noise	3 stations	6 Monthly
4.	Soil	3 stations	6 Monthly



Solid Waste Management

During first year 38,390 cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

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- Controlled blasting would be practiced
- Optimum quantity of explosives would be used.
- Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on Haul road by using water Tankers.
- ✓ Regular repair of Haul road
- ✓ All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

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- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the Initiator are but a few of the steps necessary to ensure its safe use.

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- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage. unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidl etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, It will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge

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of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

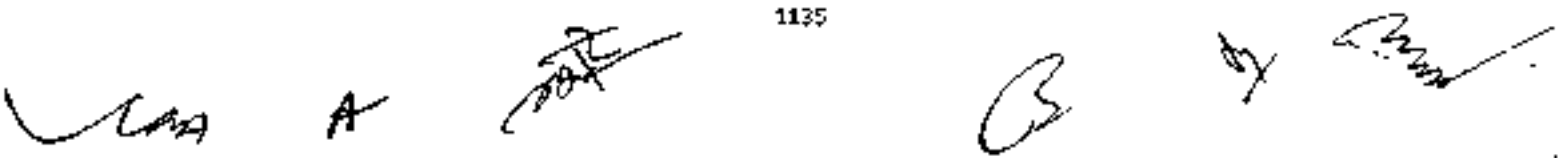
Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.

- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Gamaherliya Stone Deposit of Md. Noorujjaman Shekh, Village : Gamaherliya, Thana : Hiranpur, Distt.: Pakur, Jharkhand (2.69 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA,III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nic.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to be submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

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24. Khosaldhara Stone Mine of M/s RAR Stone Works, Village : Khosaldhara, P.O. : Baliyadangal, P.S. : Maheshpur, Distt.: Pakur, Jharkhand (1.133 Ha).

(Proposal no.: SIA/JH/MIN/501009 /2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC) (re-appraisal of Environment Clearance issued by DEIAA, Pakur).

The project has been granted EC by DEIAA, Pakur vide letter no. 61/DEIAA dated 26.12.2016.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

This is re-appraisal of the EC issued by DEIAA, Latehar which has been taken up for consideration on 25.10.2024. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B2.

Existing baseline condition as per monitoring report submitted by PP is as follows PM₁₀ -90 µg/m³ PM_{2.5} -55 µg/m³ SO₂ -21.1 NO₂ - 25.8 µg/m³. All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

As per certified compliance report of JSPCB regarding previous EC, plantation has been done in safety zone.

Production detail as per letter no. 1330/M dated 17.08.2024 by DMO, Pakur is within the permissible limit of EC.

The compliance report of previous EC has been certified by Regional Office, JSPCB, Dumka vide memo no. 1838, dated 26.09.2024.

EC Application for: 159 Ton Per Day (Avg.) / 47,700 TPA (Avg.) Boulder Stone.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Khosaldhara Stone Mine
2	Lessee:	: M/s RAR Stone Works: Partners- 1. Shri Rahul Kumar & 2. Shri Ravi Kumar
3	Lessee Address	: Partners- 1. Shri Rahul Kumar, S/O- Shri Rajendra Prasad, Add.- Amrapara (Pakur), State - Jharkhand 2. Shri Ravi Kumar, S/O- Shri Ram Narayan Prasad Add.- Amrapara, Santhali, Pakur, State - Jharkhand 3. Shri Ashutosh Kumar S/O- Late Bhagwan Prasad

			Add.- Barhabad (Pakur), State - Jharkhand	
4	Lease Area	:	1.133 Ha	
5	Type of Land	:	Non-Forest Ralyari Land	
6	Project Cost	:	Capital Cost: 80.85 Lakhs	Recurring Cost: 7.37 Lakhs
7	EMP Budget	:	Capital Cost: 8.284 Lakhs	Recurring Cost: 5.681 Lakhs
8	New or Expansion	:	New (Re-appraisal of DEIAA EC)	
9	Mineable Reserves	:	1,55,232 cum	4,19,126.4 tons
10	Mine Life	:	8 years & 9 Month only	
11	Man power	:	27Person	
12	Water Requirement	:	6.62 KLD (Drinking: 0.41 KLD, Dust Suppression: 2.18 KLD, Plantation: 4.03 KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	D.G. Set / power	:	20 KVA D.G. Set proposed	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Bansloi River – 1.25 km – N direction	
17	Nearest Habitation	:	Pathria – 1.10 km in the South direction	
18	Nearest Rail Station	:	Murari Railway Station is at areal distance of 24 km SE direction (aerial distance).	
19	Nearest Air Port	:	SidoKanhu Airport is at aerial distance of 46 km SW direction (aerial distance).	
20	Nearest Forest	:	More than 250 m, as per DFO, Pakur forest division, Letter no.- 1339 Dated: 08/12/2015	
21	Road & Highways	:	Amrapara-Maheshpur-Murari road at a distance of 545 m in NE direction. SH-18 at 8 km West direction (aerial distance).	

CO-ORDINATES

Point ID	Latitude	Longitude
P1	24° 29' 02.02054362" N	087° 37' 42.64313246" E
P2	24° 29' 03.21120856" N	087° 37' 42.81242283" E
P3	24° 29' 04.04226573" N	087° 37' 43.11038688" E
P4	24° 29' 04.59502782" N	087° 37' 43.40467039" E
P5	24° 29' 03.98615374" N	087° 37' 44.42907403" E
P6	24° 29' 03.68317524" N	087° 37' 44.98122353" E
P7	24° 29' 03.00481942" N	087° 37' 45.77124933" E
P8	24° 29' 03.13731425" N	087° 37' 46.05098848" E
P9	24° 29' 02.64951108" N	087° 37' 47.08369729" E

P10	24° 29' 02.33709172" N	087° 37' 47.10785668" E
P11	24° 29' 01.96483766" N	087° 37' 47.56355320" E
P12	24° 29' 01.54286983" N	087° 37' 47.93378273" E
P13	24° 29' 01.34574789" N	087° 37' 47.62105162" E
P14	24° 29' 01.08784040" N	087° 37' 48.03016118" E
P15	24° 29' 00.99619143" N	087° 37' 48.45773748" E
P16	24° 29' 00.32788680" N	087° 37' 48.20891073" E
P17	24° 28' 59.98667366" N	087° 37' 48.07411704" E
P18	24° 28' 59.60016320" N	087° 37' 47.82401935" E
P19	24° 28' 59.72187653" N	087° 37' 47.20377170" E
P20	24° 29' 00.07132940" N	087° 37' 46.59430970" E
P21	24° 29' 00.48690872" N	087° 37' 46.07945716" E
P22	24° 29' 00.69251673" N	087° 37' 45.61987658" E
P23	24° 29' 01.04008637" N	087° 37' 45.07964835" E
P24	24° 29' 00.73337031" N	087° 37' 44.81172757" E
P25	24° 29' 01.12939837" N	087° 37' 44.33035911" E
P26	24° 29' 01.37995434" N	087° 37' 44.41343060" E
P27	24° 29' 01.64300599" N	087° 37' 44.02539402" E
P28	24° 29' 01.90856270" N	087° 37' 43.41038705" E

LAND DETAILS

Khata no.	Plot no.
08	51

STATUTORY CLEARANCES

1	Lease Deed/Lease docs	: i. The Letter of Intent (LoI) has been issued by DMO, Pakur vide memo no. 2215/M, dated 29.12.2015. ii. Lease deed : 04.12.2017 to 03.12.2027.
2	CO	: The CO, Maheshpur vide letter no. : 312/Ra, dated 27.04.2024 has mentioned the plot no. of the project is not recorded as "Jungle Jhari" in R.S. Khatlyan & Register II.
3	DMO	: DMO, Pakur vide memo no. 1329/M, dated 17.08.2024 certified that no other mining area exists within 500 m radius from proposed project site.
4	DFO Wild Life	: DFO -cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. : 336, dated 15.02.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.

5	DFO Territorial	: DFO, Pakur Forest Division vide letter no. : 1339, dated 08.12.2015 certified that the distance of notified forest is more than 500 meters from project site.
6	DSR	: The DMO, Pakur has been certified vide memo no. 1320/M, dated 17.08.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 154, Page no. 131).
7	Gram Sabha	: Gram Sabha conducted on 01.10.2015.
8	Mine Plan Approval	: Approved by DMO, Pakur vide memo no. 1602/M, dated 25.09.2024.
9	Production Report	: Production figure issued by DMO, Pakur vide memo no 1330/M, dated 17.08.2024.
10	Compliance report of previous EC	: Compliance report of previous EC has been certified by Regional Office, JSPCB, Dumka vide memo no. 1838, dated 26.09.2024.
11	Previous Environmental Clearance (EC)	: Previous EC granted by DEIAA, Pakur vide letter no. 61/DEIAA dated 26.12.2016.
12	Consent to Establish (CTE)	: CTE issued by JSPCB vide Ref. no. : JSPCB/HO/RNC/CTE-2067859 /2018/233, dated 07.03.2018.
13	Consent to Operate (CTO)	: CTO issued by JSPCB vide Ref. no. : i. JSPCB/RO/DMK/CTO-2210795/2018/70, dated 28.03.2018. ii. JSPCB/RO/DMK/CTO-6244753/2019/168, dated 31.10.2019. iii. JSPCB/RO/DMK/CTO-14391285/2022/177, dated 12.11.2022.
14	Qualified Person	: Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method	
2	Quarry Area	:	1.133 Ha	Life of Mine – 8 year & 9 Month
3	Waste Generation	:	9,945cum	
4	Stripping Ratio	:	10:07	
5	Working Days	:	300	
6	Bench: size	:	6 m x 6 m.	

7	Elevation of Mine	:	63m–61m AMSL
8	Ground Level Elevation	:	61 AMSL
9	Ultimate Working Depth	:	26 metre
10	Water Table	:	Pre Monsoon – 28 m AMSL Post Monsoon – 22 m AMSL
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	16.68 kg/day slurry explosives
13	Diesel/Fuel requirement	:	HSD – 192 liters / day (57.6 KL/year)

Production Details

SUMMARY OF YEARWISE PRODUCTION

Year	Production of Stone / Year			Per Day Production		Removal of O.B.
	Cum.	T.F.	Tonnes	Cum	Tonnes	Cum
1 st	19500	2.7	52650	65.00	175.4	13000
2 nd	18600	2.7	50220	62.00	167.4	0
3 rd	17700	2.7	47790	59.00	159.3	0
4 th	16800	2.7	45360	56.00	151.2	0
5 th	15900		42930	53.00	143.1	
Total	88500	2.7	238950	59.00 (Avg.)	159.3 (Avg.)	13000

Land Use

Land Use pattern(Existing, Proposed & at the Conceptual Stage i.e. end of mine)

SL	Pattern	Existing Land Use (Ha)	Proposed Current Plan Period (Ha)	Proposed Land Use at End of Life of Mine (Ha)	Land Usage at Conceptual Stage
1	Mining Area	0.410	0.750	0.750	Water Body

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2	Office /Store	0.000	0.000	0.000	
3	Dump Yard	0.000	0.020	0.020	Plantation
4	Garland Drain	0.000	0.010	0.010	Garland Drain
5	Safety Zone	0.351	0.351	0.351	Plantation
6	Settling Tank	0.001	0.001	0.001	Settling Tank
7	Unutilized	0.723	0.001	0.001	Plantation
	TOTAL	1.133	1.133	1.133	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.351 Ha	562
2	Along Approach Road	0.545km	728 (300 Already done during previous year of mining)
TOTAL			1,343

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

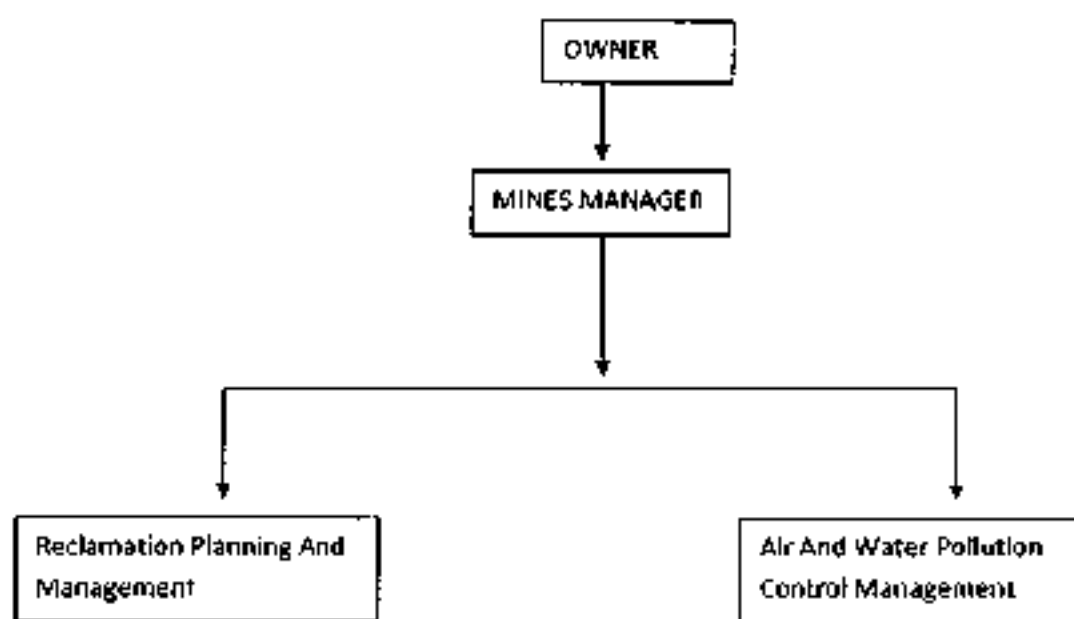
Budget for Environmental Management

Sl. No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. (Rs. 1000 per Tanker)	--	3,00,000
2	Plantation 800 X 728 = Rs 5,82,400 (Gabion Plantation along approach road) 400 X 615 = Rs.2,46,000 (Plantation within lease area) (also Includes Fertilizer, Pesticides, Maintenance)	8,28,400	1,34,300

Sl. No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
3	Environmental Monitoring (One Day Monitoring) Ambient Air 24 hrs -Rs.27,270 Ground Water -Rs. 18,630 Noise 24 hrs - Rs.21,000 Total -Rs. 66,900 (Per Season) At least two seasons in a Year -Rs. 66,900 x 2 = Rs. 1,33,800	..	1,33,800
Total		8,28,400	5,68,100

Environment Monitoring Plan (post operation)

Environment management cell



FUNCTIONS OF ENVIRONMENT MONITORING CELL

- Supervision: Managed by Mines Manager with a qualified technical team.
- Personnel: Includes skilled, semi-skilled, unskilled, and other third parties.
- Responsibilities:
 - ✓ Implement environmental control measures.
 - ✓ Oversee reclamation planning and management.
 - ✓ Manage air and water pollution control.
 - ✓ Liaise with state and central statutory agencies.
 - ✓ Develop greenbelt areas.

- **Performance Review:** Assess corporate environmental performance and report non-compliances.
- **Remedial Actions:** Suggest and implement actions for exceeding pollution limits.
- **Coordination:**

Collect health statistics for workers and local population.

Act as a bridge for project implementation and Project Authorities

Facilitate afforestation efforts.

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM ₁₀ , PM _{2.5} , SO ₂ , NO _x in the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly

Solid Waste Management

In the mining plan period, a total of 9,945 cum. of Overburden will be generated. Out of the total overburden (O.B.) of 9,945 cum., 1,635 cum. will be used for leveling the haul road, with the remaining 8,310 cum. designated for back filling of the mine void.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced
- Optimum quantity of explosives would be used.
- Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on Haul road by using water Tankers.
- ✓ Regular repair of Haul road
- ✓ All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Hazard Identification & Risk Analysis in Stone Mining operation

S. No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

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Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging [Regulation 106(5) of MMR 1961]

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the

drill hole continuously and discharges the same in a dust collector specially provided for the purpose.

- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overtaking vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge

of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

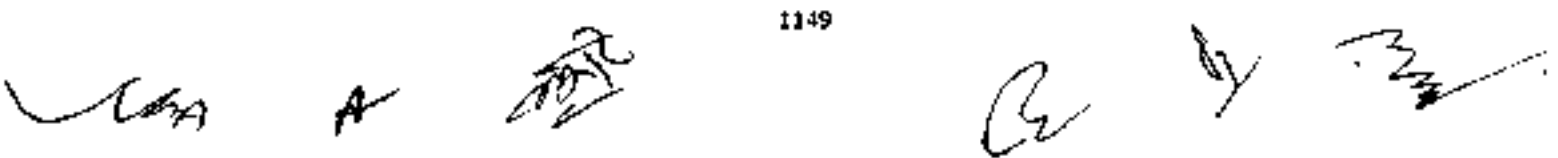
Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.

- I. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Khosaldhara Stone Mine of M/s RAR Stone Works, Village : Khosaldhara, P.O. : Baliyadangal, P.S. : Maheshpur, Distt.: Pakur, Jharkhand (1.133 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- I. During appraisal of the project it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC.
- II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- III. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to be submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.



25. Stone Deposit of Khaksa - 84 of M/s Tridev Engicon Pvt. Ltd., Village : Khaksa-84, P.O. : Pakuria, Distt.: Pakur, Jharkhand (4.67 Ha).

(Proposal no.: SIA/JH/MIN/502126 /2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC) (re-appraisal of Environment Clearance issued by DEIAA, Pakur).

The project has been granted EC by DEIAA, Pakur vide letter no. 169/DEIAA dated 09.09.2017.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

This is re-appraisal of the EC issued by DEIAA, Latehar which has been taken up for consideration on 25.10.2024. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B2.

Existing baseline condition as per monitoring report submitted by PP is as follows PM₁₀ -90 µg/m³ PM_{2.5} 55 µg/m³ SO₂-21.1 NO₂- 25.8µg/m³ All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

Production detail as per letter no. 2324/ M dated 16.10.2023 by D.M.O. Pakur is within the permissible limit of EC.

The compliance report of previous EC has been certified by JSPCB, Regional Office -cum- Laboratory, Dumka vide Ref. no. : 2196 , dated 14.10.2023.

Environment Clearance Application for: Proposed Capacity- 64,202cum/annum or 1,73,345 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Stone Deposit of Khaksa No.- 84 Project Type – Stone Mine
2	Lessee:	: M/s Tridev Engicon Pvt. Ltd. Director – Shri Ravi Shankar Kumar
3	Lessee Address	: Village – Khaksa 84, Thana- Pakuria, District- Pakur, Jharkhand
4	Lease Area	: 4.67 Ha
5	Type of Land	: Non Forest Raiyati Land
6	Project Cost	Capital Cost: 69.69 Lakhs Recurring Cost: 16.89

			Lakhs/Year
7	EMP Budget	Capital Cost: 11.444 Lakhs	Recurring Cost: 6.77 Lakhs/Year
8	New or Expansion	New (Re-appraisal of DEIAA EC)	
9	Mineable Reserves	4,56,860 cum	12,33,522 Tonnes
10	Mine Life	7 years.	
11	Man power	34 Person	
12	Water Requirement	9.89 KLD (Drinking: 0.51 KLD, Dust Suppression: 1.6 KLD, Plantation: 5.20 KLD)	
13	Water Source	From Nearby villages by tankers	
14	DG Set / power	60 KVA D.G. Set proposed	
15	Crusher	No crusher	
16	Nearest Water Body	Brahmani River – 3.50 km – South direction. (aerial distance).	
17	Nearest Habitation	Tiladanga – 0.90 Km in SE	
18	Nearest Rail Station	Pakdaha Harinsing Railway Station is 8.0 km (aerial distance).	
19	Nearest Air Port	Deoghar, Airport at 97 km.	
21	Road & Highways	NH-114 A at 8.0 km (aerial distance).	

CO-ORDINATES

Point ID	Latitude	Longitude
1	24° 16' 51.52233143" N	087° 39' 07.83315134" E
2	24° 16' 52.30533970" N	087° 39' 08.65550745" E
3	24° 16' 53.00735772" N	087° 39' 09.35611889" E
4	24° 16' 54.11162624" N	087° 39' 10.09625607" E
5	24° 16' 55.02373939" N	087° 39' 10.66203070" E
6	24° 16' 54.73098609" N	087° 39' 11.18432364" E
7	24° 16' 53.75638580" N	087° 39' 12.12339985" E
8	24° 16' 53.31810212" N	087° 39' 10.94314239" E
9	24° 16' 53.21964697" N	087° 39' 10.92890835" E
10	24° 16' 52.56372481" N	087° 39' 11.67616045" E
11	24° 16' 51.74554410" N	087° 39' 11.52663597" E
12	24° 16' 51.12653515" N	087° 39' 11.27273436" E
13	24° 16' 51.00238073" N	087° 39' 11.44323626" E
14	24° 16' 50.15912778" N	087° 39' 11.30979797" E
15	24° 16' 50.03258091" N	087° 39' 11.55280248" E
16	24° 16' 49.68741309" N	087° 39' 11.90152110" E

17	24° 16' 49.59344857" N	087° 39' 12.24949902" E
18	24° 16' 49.35293216" N	087° 39' 12.61556156" E
19	24° 16' 49.70995974" N	087° 39' 13.42567838" E
20	24° 16' 50.14167855" N	087° 39' 12.78992165" E
21	24° 16' 50.47341730" N	087° 39' 12.07850153" E
22	24° 16' 51.37644390" N	087° 39' 12.20872494" E
23	24° 16' 51.50690931" N	087° 39' 11.98454985" E
24	24° 16' 52.02048521" N	087° 39' 12.06995062" E
25	24° 16' 52.06982838" N	087° 39' 12.40565653" E
26	24° 16' 53.21017543" N	087° 39' 12.69384628" E
27	24° 16' 53.98469022" N	087° 39' 13.02477290" E
28	24° 16' 55.16547125" N	087° 39' 13.08150715" E
29	24° 16' 55.49362165" N	087° 39' 12.25950293" E
30	24° 16' 55.76193448" N	087° 39' 11.21313783" E
31	24° 16' 56.53448143" N	087° 39' 10.30716327" E
32	24° 16' 55.98567596" N	087° 39' 09.68823285" E
33	24° 16' 55.55630423" N	087° 39' 09.48303309" E
34	24° 16' 55.23960819" N	087° 39' 09.19836660" E
35	24° 16' 55.51596565" N	087° 39' 08.81406795" E
36	24° 16' 56.43640035" N	087° 39' 09.58503961" E
37	24° 16' 57.35446137" N	087° 39' 10.43904277" E
38	24° 16' 56.99507485" N	087° 39' 11.14596681" E
39	24° 16' 57.33665551" N	087° 39' 11.73783667" E
40	24° 16' 57.59999303" N	087° 39' 12.29531189" E
41	24° 16' 57.33904558" N	087° 39' 13.32960493" E
42	24° 16' 57.24057640" N	087° 39' 13.80998097" E
43	24° 16' 57.19670022" N	087° 39' 14.34254421" E
44	24° 16' 56.86104055" N	087° 39' 14.50622865" E
45	24° 16' 55.08019845" N	087° 39' 14.53026270" E
46	24° 16' 54.83683509" N	087° 39' 14.86999459" E
47	24° 16' 53.28481062" N	087° 39' 14.50419832" E
48	24° 16' 52.15698469" N	087° 39' 14.42705630" E
49	24° 16' 52.03280905" N	087° 39' 14.64759911" E
50	24° 16' 50.78286720" N	087° 39' 14.36520041" E
51	24° 16' 50.50108124" N	087° 39' 13.99263988" E
52	24° 16' 49.70136032" N	087° 39' 14.72173091" E
53	24° 16' 48.56897921" N	087° 39' 14.86443404" E
54	24° 16' 47.33977325" N	087° 39' 15.52062153" E
55	24° 16' 46.04291429" N	087° 39' 16.06908102" E
56	24° 16' 45.32755327" N	087° 39' 16.31735034" E
57	24° 16' 45.00137132" N	087° 39' 16.05425594" E
58	24° 16' 45.01529936" N	087° 39' 15.77954653" E

59	24° 16' 45.12552526" N	087° 39' 15.55942537" E
60	24° 16' 45.48323921" N	087° 39' 15.44637119" E
61	24° 16' 45.98763289" N	087° 39' 15.11930182" E
62	24° 16' 46.44693080" N	087° 39' 15.09424323" E
63	24° 16' 46.80405535" N	087° 39' 14.94435697" E
64	24° 16' 47.27536480" N	087° 39' 14.83293008" E
65	24° 16' 48.37669377" N	087° 39' 14.60749747" E
66	24° 16' 47.82756876" N	087° 39' 13.98077885" E
67	24° 16' 47.26981021" N	087° 39' 13.44109628" E
68	24° 16' 46.95104256" N	087° 39' 13.10935673" E
69	24° 16' 46.88063384" N	087° 39' 12.25869017" E
70	24° 16' 46.48586946" N	087° 39' 11.70269830" E
71	24° 16' 46.13896184" N	087° 39' 11.16247726" E
72	24° 16' 46.57622560" N	087° 39' 10.90044114" E
73	24° 16' 46.40152387" N	087° 39' 10.03889593" E
74	24° 16' 46.44019534" N	087° 39' 09.05907466" E
75	24° 16' 46.79995750" N	087° 39' 08.47609879" E
76	24° 16' 47.20670626" N	087° 39' 07.20291543" E
77	24° 16' 47.86203270" N	087° 39' 07.35061565" E
78	24° 16' 48.21313254" N	087° 39' 07.98311846" E
79	24° 16' 48.57283132" N	087° 39' 08.79367617" E
80	24° 16' 48.83771376" N	087° 39' 08.69664240" E
81	24° 16' 49.71246350" N	087° 39' 07.36998367" E
82	24° 16' 50.90651263" N	087° 39' 08.47204279" E

LAND DETAILS

Khata no.	Plot no.
56 & 154	6804, 6814, 6815, 6817, 6818, 6819, 6820, 6821 & 6822

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Lease deed : 07.09.2019 to 06.09.2029.
2	CO	:	The CO, Pakuria (Pakur) vide letter no. 785/Ra. dated 16.09.2023 has mentioned the plot no. of the project is not recorded as "Jungle Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Pakur vide memo no. 2321/M, dated 16.10.2023 certified that no other mining lease area exists within 500 meters radius from proposed project site.

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4	DFO Wild Life	:	DFO -cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide memo no.: 1884, dated 29.09.2023 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	DFO, Pakur Forest Division vide letter no. 1756, dated 03.12.2016 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 1737/M, dated 15.10.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 108, Page no. 139).
7	Gram Sabha	:	Gram Sabha conducted on 07.10.2016.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 1805/M, dated 18.10.2024.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.
10	Production Report	:	Production figure issued by DMO, Pakur vide memo no. 2324/M, dated 16.10.2023.
11	Compliance report of previous EC	:	Compliance report of previous EC certified by RO, JSPCB, Dumka vide ref. no. 2196, dated 14.10.2023.
12	Previous Environmental Clearance (EC)	:	Previous EC granted by DEIAA, Pakur vide letter no. 169/DEIAA dated 09.09.2017
13	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. : JSPCB/HO/RNC/CTE-6644620/2020/17, dated 08.01.2020.
14	Consent to Operate (CTO)	:	CTO issued by JSPCB vide Ref. no. : JSPCB/RO/DMK/CTO-7365851/2020/11, dated 05.02.2020.

Working Details

1	Mining Method	:	Opencast Mechanized Method
2	Quarry Area	:	2.788Ha Life of Mine – 7 Years *Note – Life of mine is calculated for remaining reserve i.e. 1,233,522 tonnes.
3	Waste Generation	:	22,808 cum.
4	Stripping Ratio	:	1:13.9
5	Working Days	:	300

6	Benchest size	:	6 m x 6 m
7	Elevation of Mine	:	58 to 50 m AMSL
8	Ground Level Elevation	:	58 m AMSL
9	Ultimate Working Depth	:	26 m
10	Water Table	:	During pre-monsoon 7.8m AMSL During post-monsoon 13.4 m AMSL
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	33.36 kg Slurry explosives/day
13	Diesel/fuel requirement	:	HSD – 260 liters / day (78 KL/year)

Production Details

SUMMARY OF YEARWISE PRODUCTION (NEXT PLAN PERIOD)

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.
Development Year (2024-2025)	62560	2.7	168912	209	563	11258	38
Development Year (2025-2026)	63436	2.7	171277	211	571	0	0
Development Year (2026-2027)	63478	2.7	171391	212	571	0	0
Development Year (2027-2028)	64202	2.7	173345	214	578	0	0
Development Year (2028-2029)	63450	2.7	171315	212	571	11550	39
Total	317126	2.7	856240	211	571	22808	38

LAND USE

Existing, Proposed & Conceptual Land Use

SL	Pattern	Existing Land Use (Ha)	Proposed Current Plan Period (Ha)	Proposed Land Use at End of Life of Mine (Ha)	Land Usage at Conceptual Stage
1	Mining Area	1.667	2.788	2.788	Water Body

2	Dump Yard	0.197	0.330	0.330	-
3	Garland Drain	0.000	0.096	0.096	Garland Drain
4	Safety Zone	0.000	1.456	1.456	Plantation
5	Unutilized	2.806	0.000	0.000	Plantation
	TOTAL	4.670	4.670	4.670	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	1.456 Ha	2329
2	Along Approach Road	0.400km	266
TOTAL			1,048

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

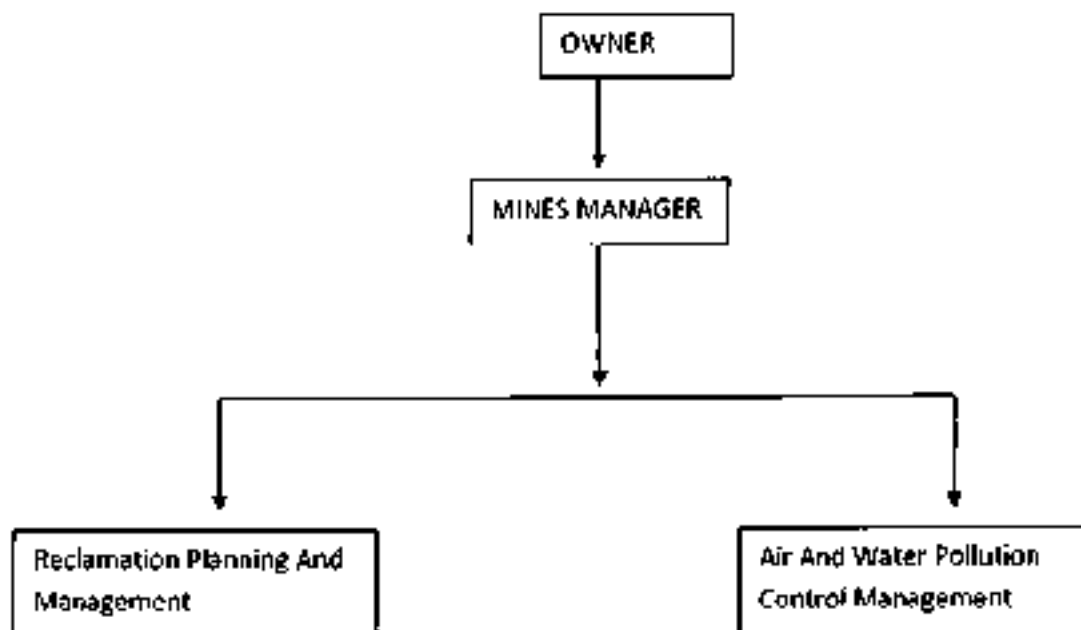
• EMP BUDGET

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. (Rs. 1200 per Tanker)	----	3,60,000
2	Plantation 800 X 266 = Rs 2,12,800 (Gabion Plantation along approach road) 400 X 2,329 = Rs. 9,31,600 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	11,44,400	1,14,440
3	Environmental Monitoring (One Day Monitoring) - Ambient Air 24 hrs (3 point) - Rs.27,270 - Ground Water (2 point) - Rs.12,420 - Noise 24 hrs (3 point) - Rs.21,000	---	2,03,220

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
	- Soil (3 point) -Rs.40,920 - Total -Rs. 1,01,610 (Per Season) - At least two seasons in a Year -Rs.1,01,610 - x2 = Rs. 2,03,220 - Source: Central Pollution Control Board - Notification, New Delhi, the 23rd February, 2022		
Total		11,44,400	6,77,660

Environment Monitoring Plan (post operation)

Environment management cell



FUNCTIONS OF ENVIRONMENT MONITORING CELL

- **Supervision:** Managed by Mines Manager with a qualified technical team.
- **Personnel:** Includes skilled, semi-skilled, unskilled, and other third parties.
- **Responsibilities:**
 - ✓ Implement environmental control measures.
 - ✓ Oversee reclamation planning and management.
 - ✓ Manage air and water pollution control.
 - ✓ Liaise with state and central statutory agencies.
 - ✓ Develop greenbelt areas.
- **Performance Review:** Assess corporate environmental performance and report non-compliances.
- **Remedial Actions:** Suggest and implement actions for exceeding pollution limits.
- **Coordination:**

Collect health statistics for workers and local population.

Act as a bridge for project implementation and Project Authorities

Facilitate afforestation efforts.

Environment Monitoring Programme

Sl. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	One Day Monitoring (within 6 months)
2.	Water	2 stations	One Day Monitoring (within 6 months)
3.	Soil	3 stations	One Day Monitoring (within 6 months)
4.	Noise	3 stations	One Day Monitoring (within 6 months)

Solid Waste Management

22,808 cum. O.B shall be generated during the next plan period which shall be backfilled within the exhausted quarry.

Water Quality Management

- ♦ Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- ♦ Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- ♦ Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- ♦ Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- ♦ Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- ♦ Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- ♦ Controlled blasting would be practiced
- ♦ Optimum quantity of explosives would be used.
- ♦ Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on Haul road by using water Tankers.
- ✓ Regular repair of Haul road
- ✓ All Trucks carrying stone outside lease area will have PUC certificate

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Hazard identification & Risk Analysis in Stone Mining operation

S. No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961)

- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overtaking vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

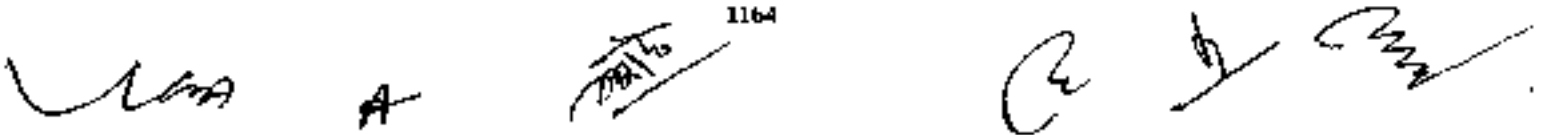
Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.

- I. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Stone Deposit of Khaksa - 84 of M/s Tridev Engicon Pvt. Ltd., Village : Khaksa-84, P.O. : Pakuria, Distt.: Pakur, Jharkhand (4.67 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure - II along with following specific conditions :

- I. During appraisal of the project it is seen that the project authority have not fully complied the condition of green belt development as per the previous EC. Hence, the project authorities are required to plant twice the number of trees as was required in the previous EC.
- II. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- III. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- IV. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- V. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- VI. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests . Summary findings of same to submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.



26. Stone Mine of M/s Cegnet Stone Works, Village : Hajori, Thana no. : 63, Thana : Hiranpur, Distt.: Pakur, Jharkhand (2.36 Ha).

(Proposal no.: SIA/JH/MIN/502018 /2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Terms of Reference (ToR) (re-appraisal of Environment Clearance issued by DEIAA, Pakur).

The project has been granted EC by DEIAA, Pakur vide letter no. 167/DEIAA dated 09.09.2017.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

This is re-appraisal of the EC issued by DEIAA, Pakur which has been taken up for consideration on 25.10.2024. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B1.

During appraisal it was found that the project authorities have already obtained EC from SEIAA, Jharkhand vide letter no. EC/SEIAA/2023-24/2936/2023/286, dated 06.10.2023 under B2 category based on cluster certificate issued by DMO, Pakur vide memo no. 1693/M, dated 22.07.2023 stating that no other mine lease exists in the cluster. Hence area of the cluster stated as 5.83 acres (2.35 Ha) which is the same area of this project.

Now the project authorities have made a fresh application bearing proposal no. SIA/JH/MIN /502018/2024 for consideration of the project under DEIAA to SEIAA re-appraisal of EC. The current cluster certificate from DMO, Pakur vide memo no. 1398/M dated 02.09.2024 states that one more mine (lease period 26.02.2016 for a period of 10 years) exists within the cluster and hence the total cluster area specified as 17.60 acres (7.12 Ha.).

The project authorities have concealed the fact that they have already obtained EC from SEIAA vide letter no. EC/SEIAA/2023-24/2936/2023/286, dated 06.10.2023 under B2 category.

As per the present DMO certificate the other mine in the cluster is in existence since 26.02.2016. Hence, the credibility of the earlier DMO certificate issued vide memo no. 1693/M, dated 22.07.2023 is doubtful.

In view of the above the SEAC is of the opinion that the project authorities have made application to SEIAA / SEAC manipulating and concealing the actual facts.

Therefore, the Committee recommends revoking the earlier ECs issued to the project and initiate necessary action as applicable.



27. Baliapatra Stone Deposit of Shri Abhishek Kumar Bhagat, Village : Baliapatra, Thana : Maheshpur, Distt.: Pakur, Jharkhand (1.93 Ha).

(Proposal no.: SIA/JH/MIN/502102 /2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 24.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B2.

Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 25,700 Cum. / annum or 66,690 TPA

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Baliapatra Stone Deposit
2	Lessee:	Proponent- Sri Abhishek Kumar Bhagat
3	Lessee Address	S/o Pradip Prasad Bhagat Dhulian Road, Harindanga Bazar Pakur, Dist- Pakur, Jharkhand.
4	Lease Area	1.93 Ha
5	Type of Land	Non Forest Raiyati Land
6	Project Cost	Capital Cost: Rs. 72.99 Lakhs Recurring Cost: Rs. 4.7 Lakhs
7	EMP Budget	Capital Cost: Rs. 7.652 Lakhs Recurring Cost: Rs. 5.797 Lakhs
8	New or Expansion	New
9	Mineable Reserves	cum.: 2,46,848 cum Tonnes: 6,66,489.60 tons
10	Mine Life	10 years.
11	Man power	18 Person
12	Water Requirement	6.09 KLD (Drinking: 0.27 KLD, Dust Suppression: 1.52 KLD, Plantation: 4.30 KLD)
13	Water Source	From Nearby villages by tankers
14	DG Set / power	60 KVA D.G. Set proposed
15	Crusher	No crusher
16	Nearest Water Body	Banslai river at 12.64 km North direction.
17	Nearest Habitation	Baliapatra Village – 0.413 Km in NE Direction
18	Nearest Rail Station	Nalhati Railway Station is at areal distance of 14 km SE direction
19	Nearest Air Port	Deoghar Airport is at areal distance of 104.26 km SW direction.

20	Nearest Forest	: More than 250 m, as per Division Forest Officer NOC. letter no.- 877 Dated- 25/06/2024
21	Road & Highways	: A cart road is well connected to applied lease area from a PWD road which is passing at a distance of 1.500 km from the applied lease area. This PWD road is connected to Pakuria- Nalhati Road at Basantpur, which is passing at a distance of about 5.50km from the applied lease area.

CO-ORDINATES

Point Name	Latitude	Longitude
1	24°22' 10.505"N to 24°22' 15.471"N	87°43' 55.047" E to 87°44' 02.002" E.

LAND DETAILS

Khata no.	Plot no.
20	572, 575, 579 & 580 (P)
14	574 (P)
06	578
22	580 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	: The Letter of Intent (LOI) has been issued by DMO, Pakur vide memo no. 1712/M, dated 09.10.2024.
2	CO	: The CO, Maheshpur vide letter no. 618/Ra. dated 23.08.2024 has mentioned the plot no. of the project is not recorded as "Jungle Jhari" in R.S. Khathyan & Register II and also mentioned that the habitation of 26-28 houses at a distance of 340 meters of proposed project site, accordingly PAs has submitted EMP for the same.
3	DMO	: DMO, Pakur vide memo no. 1784/M, dated 17.10.2024 certified that 01 other mining lease area (6.20 Acre) exists within 500 meters radius from proposed project site and total area is 6.20 Acre or 4.44 Ha.
4	DFO Wild Life	: DFO -cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no.: 2273, dated 18.09.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	: DFO, Pakur Forest Division vide letter no. 877, dated 25.06.2024 certified that the distance of reserved / protected forest is more

		than 250 meters from proposed project site.
6	DSR	The DMO, Pakur has been certified vide memo no. 1785/M, dated 17.10.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 26, Page no. 129).
7	Gram Sabha	BDO, Maheshpur vide letter no. 1077/Vi., dated 16.08.2024 informed that Gram Sabha conducted on 08.08.2024.
8	Mine Plan Approval	Approved by District Mining Officer, Pakur vide Memo No. 1819/M, dated 19.10.2024.
9	Qualified Person	Shri Sahadev Singh was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi-Mechanized Method	
2	Quarry Area	:	1.93 Ha	Life of Mine – 10 year
3	Waste Generation	:	15600 cum	
4	Stripping Ratio	:	07:09	
5	Working Days	:	300	
6	Bench: size	:	2 m x 2.5 m,	
7	Elevation of Mine	:	94m – 56m AMSL	
8	Ground Level Elevation	:	56 AMSL	
9	Ultimate Working Depth	:	38 m AMSL	
10	Water Table	:	Post Monsoon – 55 m AMSL	Pre Monsoon – 52.8m AMSL
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	90 kg Slurry explosives/day	
13	Diesel/Fuel requirement	:	HSD – 218 liters / day (65.4 KL/year)	

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B)
1st	24700	2.7	66690.00	82	222	10400	34.66
2nd	24700	2.7	66690.00	82	222	1300	4.33

3rd	24700	2.7	66690.00	82	222	1300	4.33
4th	24700	2.7	66690.00	82	222	1300	4.33
5th	24700	2.7	66690.00	82	222	1300	4.33
Total	123500	2.7	333450	411.66 (max)	1,111.5 (max)	15600	52

Land Use pattern

SL	Pattern of Utilization	Existing Land Use (Ha)	Proposed Land Use (Ha)	Conceptual Land Use (Ha)
1	Excavation	Nil	0.769	1.334(0.724ha converted in to water reservoir & 0.61ha shall be left as dead benches)
2	Waste Dump	Nil	0.276	Comes under mining
3	Road	Nil	0.001	Comes under mining
4	Crusher	Nil	Nil	Nil
5	Plantation (Green Belt)	Nil	0.596 (Within safety zone)	0.596 (Within safety zone)
	TOTAL	Nil	1.642	1.930

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.596 Ha	953
2	Along Approach Road	0.362m	480
TOTAL			2,624

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

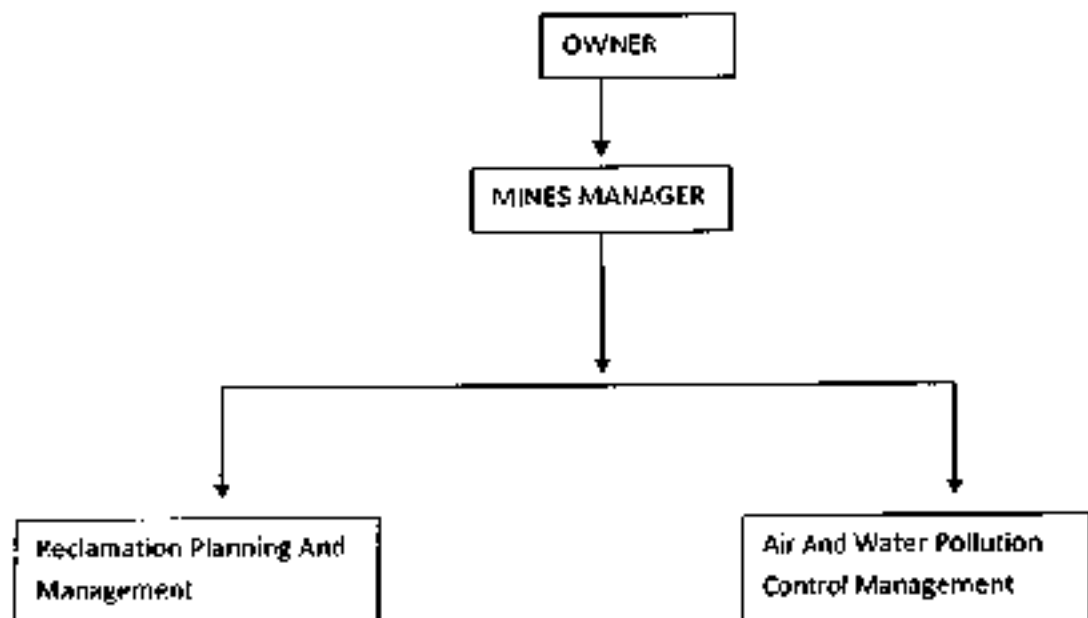
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Budget for Environmental Management

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. (Rs. 1000 per Tanker)	--	3,00,000
2	Plantation 480 X 800 = Rs 3,84,000 (Gabion Plantation along approach road) 953 X 400 = 3,81,200 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	7,65,200	76,520
3	Environmental Monitoring (One Day Monitoring) - Ambient Air 24 hrs (3 point) - Rs.27,270 - Ground Water (2 point) - Rs.12,420 - Noise 24 hrs (3 point) - Rs.21,000 - Soil (3 point) -Rs.40,920 Total -Rs. 1,01,610 (Per Season) At least two seasons in a Year -Rs. 1,01,610 x 2 = Rs. 2,03,220 Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022	--	2,03,220
Total		7,65,200	5,79,740

Environment Monitoring Programme

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Water	2 stations	6 Monthly
3.	Noise	3 stations	6 Monthly
4.	Soil	3 Station	6 Monthly



Solid Waste Management

During first year 24,432 cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

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during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

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weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.

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- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
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vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

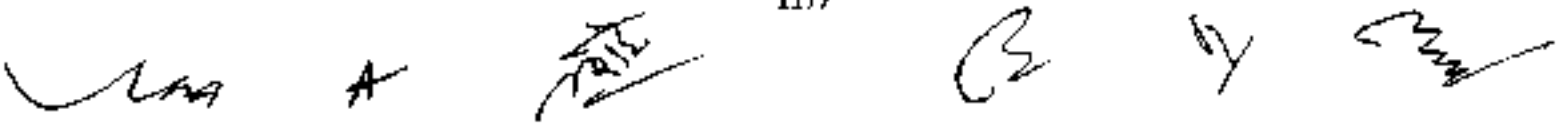
Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.

- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Ballapatra Stone Deposit of Shri Abhishek Kumar Bhagat, Village : Ballapatra, Thana : Maheshpur, Distt.: Pakur, Jharkhand (1.93 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLIFE Portal (<https://merilife.nlc.in>).
- II. The Deputy Commissioner through District Mining Officer will ensure that the mines owner of the respective leases to complete the plantation and maintenance in a time bound manner.
- III. Suitable plant species of not less than 2 M height to be planted equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- IV. Dedicated water tanker to be provided for mine. The tanker to be used for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- V. Pre employment Occupational health check up for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests Summary findings of same to be submitted along with 6 monthly compliance.
- VI. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VIII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.



28. Chatnia Stone Mine of M/s Mahavir Infra Enterprises, Village : Chatnia, Block : Chatra, Thana : Chatra (270), Distt. : Chatra, Jharkhand (1.11 Ha.).

(Proposal no.: SIA/JH/MIN/501114 /2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 25.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Terms of Reference (ToR) as per EIA notification, 2006.

ToR Application for: Proposed Capacity- 9,512 cum/annum or 25,682 TPA

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Chatnia Stone Mine Project Type – Stone Mine
2	Lessee:	M/s Mahavir Infra Enterprises Shri Brajkishore Tiwari & Partner
3	Lessee Address	Village – Chatnia, Block Office – Chatra, Thana – Chatra (270), District- Chatra, Jharkhand
4	Lease Area	1.11 Ha.
5	Type of Land	Non Forest Raiyati Land
6	Project Cost	Capital: 72.99 Lakhs Recurring: 8.69 Lakhs per year
7	EMP Budget	Capital: 6.72 Lakhs Recurring: 5.40 Lakhs per year
8	New or Expansion	New
9	Mineable Reserves	cum.: 54,450 cum Tonnes: 1,47,015 Tonnes
10	Mine Life	10 years.
11	Man power	20 Person
12	Water Requirement	5.86 KLD (Drinking: 0.30 KLD, Dust Suppression: 2.12 KLD, Plantation: 3.44 KLD)
13	Water Source	From Nearby villages by tankers
14	DG Set / power	20 KVA D.G. Set proposed
15	Crusher	No crusher
16	Nearest Water Body	Armanat River – 47 km – S-W direction (arial distance).
17	Nearest Habitation	Chatnia Village at 0.5 km

18	Nearest Rail Station	:	Kathautia Railway Station, at 29 km in East direction (arial distance).
19	Nearest Air Port	:	Birsa Munda Airport, Ranchl at 107 km S Direction.
20	Nearest Forest	:	DFO Forest Division letter no.- 347 Dated: 31/01/2023 certified that the distance of reserved / protected forest is more than 250 m from proposed project site.
21	Road & Highways	:	NH-522 at 1.6 km (aerial distance) S direction

CO-ORDINATES

1	Latitude	From N 24°12'33.944"	To N 24°12'39.128"
2	Longitude	From E 84°56'02.881"	To E 84°56'00.390"

LAND DETAILS

Khata no.	Plot no.
01	28
02	26 (P)
03	19 & 21 (P)
04	18 (P) & 24
06	20 & 30 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Chatra vide letter no. 709/Khanan, dated 01.07.2023.
2	CO	:	The CO, Chatra vide letter no. 383, dated 15.04.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R S. Khatiyar & Register II.
3	DMO	:	DMO, Chatra vide memo no. 1103, dated 08.10.2024 certified that 05 other mining lease area (2.54 Acre, 3.58 Acre, 1.72 Acre, 3.41 Acre & 4.16 Acre) exists within 500 meters radius from proposed project site and total area is 18.15 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 842, dated 26.04.2023 certified that the proposed project site is outside Eco Sensitive Zone of Lawalong Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Chatra South Forest Division vide letter no. 347, dated 31.01.2023 certified that the distance of reserved /

		protected forest is more than 250 meters from proposed project site.
6	DSR	This project is mentioned in approved DSR of Chatra District (Sl. no. 02, Page no. 66).
7	Gram Sabha	Mukhiya, Gandhariya vide letter no. 112, dated 04.05.2023 Informed that Gram Sabha conducted on 04.05.2023.
8	Mine Plan Approval	Approved by District Mining Officer, Chatra vide Letter No. 1065/Khanan, dated 26.09.2024.
9	Qualified Person	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	: Opencast Mechanized Method
2	Quarry Area	: 0.405 Ha. (During plan period) Life of Mine – 10 year
3	Waste Generation	: 5,779 cum. O.B (During plan period)
4	Stripping Ratio	: 1:5.16 or 0.19
5	Working Days	: 300
6	Benchs: size	: 6 m x 6 m
7	Elevation of Mine	: 453 to 450 m AMSL
8	Ground Level Elevation	: 453 m AMSL
9	Ultimate Working Depth	: 26 m
10	Water Table	: (During pre-monsoon 399 m AMSL) (During post-monsoon 405 m AMSL)
11	Topography of Mine	: Area represents gently sloping land.
12	Explosive Requirement	: 8 kg Slurry explosives/day
13	Diesel/Fuel requirement	: HSD – 232 liters / day (69.60 KL/year)

Production Details

SUMMARY OF YEARWISE OF PRODUCTION					
Years	Production In Cum/Year	Production In Cum/Day	O.B In Cum/Year	Production In Tons/Year	Prod. In Tons. /Day
1 st	5642	19	2294	15233	51

2 nd	9512	32	3485	25682	86
3 rd	3751	13	0.0	10128	34
4 th	6232	21	0.0	16826	56
5 th	4655	16	0.0	12569	42
Total	29792	32 Max.	5779	80438	86 Max.

LAND USE

Existing, Proposed & Conceptual Land Use

Sl. No.	Pattern	Existing Land Use (Ha)	Proposed Land Use (Ha)	Conceptual Land Use (Ha)	Area to be converted in the conceptual period.
1	Mining Activities	0.00	0.405	0.616	Water body
2	Dumping	0.00	0.032	0.00	Greenbelt
3	Mining Road	0.00	0.008	0.008	Water body
4	Garland drain	0.00	0.024	0.024	--
5	Settling Tank	0.00	0.012	0.012	--
6	Safety Zone	0.00	0.385	0.385	Greenbelt
7	Unutilized	1.11	0.243	0.065	Greenbelt
	TOTAL	1.11	1.11	1.11	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.385 Ha	616
2	Along Approach Road	0.399 km	532
TOTAL			1,148

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same

to be maintained and will be submitted with compliance report.

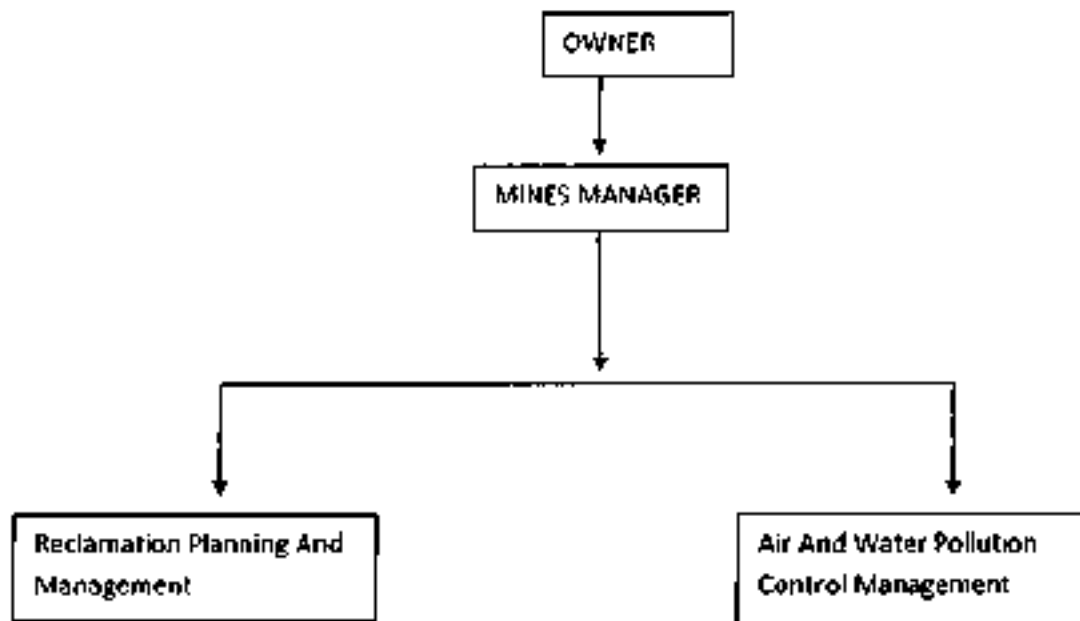
EMP BUDGET

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. (Rs. 900 per Tanker)	----	2,70,000
2	Plantation 532 X 800 = Rs 4,25,600 (Gabion Plantation along approach road) 616 X 400 = 2,46,400 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	6,72,000	67,200
3	Environmental Monitoring (One Day Monitoring) - Ambient Air 24 hrs (3 point) - Rs.27,270 - Ground Water (2 point) - Rs.12,420 - Noise 24 hrs (3 point) - Rs.21,000 - Soil (3 point) -Rs.40,920 Total -Rs. 1,01,610 (Per Season) At least two seasons in a Year -Rs.1,01,610 x2 = Rs. 2,03,220 Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022	----	2,03,220
Total		6,72,000	5,40,420

Environment Monitoring Programme

SL No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	One Day Monitoring (within 6 months)
2.	Water	2 stations	One Day Monitoring (within 6 months)
3.	Soil	3 stations	One Day Monitoring (within 6 months)

4.	Noise	3 stations	One Day Monitoring (within 6 months)



Solid Waste Management

5,779 cum. O.B shall be generated during the plan period which shall be backfilled within the exhausted quarry.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Deslited water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced

- Optimum quantity of explosives would be used.
- Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on Haul road by using water Tankers.
- ✓ Regular repair of Haul road
- ✓ All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Hazard Identification & Risk Analysis in Stone Mining operation

S. No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

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- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

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- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.

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- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- The Boundary Pillars of the proposed mine lease area will be maintained properly.
- One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- If any tree felling than necessary permission shall be taken from the competent authority.
- Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine
- Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 22, 23, 24, 25 & 26.10.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith following specific condition :-

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MerLiFE Portal (<https://merlife.nic.in>).

29. Chatnia Stone Mine of M/s Mahavir Infra Enterprises, Village : Chatnia, Block : Chatra, Thana : Chatra (270), Distt. : Chatra, Jharkhand (1.38 Ha.).

(Proposal no.: SIA/JH/MIN/501134 /2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 25.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Terms of Reference (ToR) as per EIA notification, 2006.

ToR Application for: Proposed Capacity- 24,090 cum/annum or 65,043 TPA

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Chatnia Stone Mine Project Type – Stone Mine
2	Lessee:	M/s Mahavir Infra Enterprises Shri Brajkishore Tiwari & Partner
3	Lessee Address	Village – Chatnia, Block Office – Chatra, Thana – Chatra (270), District- Chatra, Jharkhand
4	Lease Area	1.38 Ha.
5	Type of Land	Non Forest Raiyati Land
6	Project Cost	Capital: 73.54 Lakhs Recurring: 8.85 Lakhs per year
7	EMP Budget	Capital: 6.20 Lakhs Recurring: 5.35 Lakhs per year
8	New or Expansion	New
9	Mineable	cum.: 1,68,344 cum Tonnes: 4,54,528.8 Tonnes

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	Reserves	:	
10	Mine Life	:	12 years.
11	Man power	:	18 Person
12	Water Requirement	:	5.49 KLD (Drinking: 0.27 KLD, Dust Suppression: 1.96 KLD, Plantation: 3.26 KLD)
13	Water Source	:	From Nearby villages by tankers
14	DG Set / power	:	60 KVA D.G. Set proposed
15	Crusher	:	No crusher
16	Nearest Water Body	:	Amanat River – 47 km – S-W direction (arial distance).
17	Nearest Habitation	:	Chatnla Village at 0.5 km
18	Nearest Rail Station	:	Kathautla Railway Station, at 29 km in East direction (arial distance).
19	Nearest Air Port	:	Birsa Munda Airport, Ranchi at 107 km S Direction.
20	Nearest Forest	:	DFO Forest Division letter no.- 318 Dated: 15/02/2024 certified that the distance of reserved / protected forest is more than 380 m from proposed project site.
21	Road & Highways	:	NH-522 at 1.6 km (arial distance) S direction

CO-ORDINATES

Point	Latitude	Longitude
1	24° 12' 29.633" N	084° 56' 01.771" E
2	24° 12' 30.247" N	084° 56' 01.820" E
3	24° 12' 30.446" N	084° 56' 01.865" E
4	24° 12' 31.046" N	084° 56' 01.940" E
5	24° 12' 31.322" N	084° 56' 02.026" E
6	24° 12' 31.731" N	084° 56' 02.105" E
7	24° 12' 31.961" N	084° 56' 02.202" E
8	24° 12' 32.078" N	084° 56' 02.204" E
9	24° 12' 32.080" N	084° 56' 02.290" E
10	24° 12' 31.964" N	084° 56' 02.516" E
11	24° 12' 31.796" N	084° 56' 02.940" E
12	24° 12' 31.723" N	084° 56' 03.093" E

13	24° 12' 31.679" N	084° 56' 03.218" E
14	24° 12' 31.661" N	084° 56' 03.360" E
15	24° 12' 31.806" N	084° 56' 03.509" E
16	24° 12' 31.552" N	084° 56' 03.623" E
17	24° 12' 31.437" N	084° 56' 04.105" E
18	24° 12' 31.345" N	084° 56' 04.297" E
19	24° 12' 31.263" N	084° 56' 04.800" E
20	24° 12' 31.207" N	084° 56' 05.181" E
21	24° 12' 31.122" N	084° 56' 05.612" E
22	24° 12' 31.007" N	084° 56' 05.960" E
23	24° 12' 30.773" N	084° 56' 06.077" E
24	24° 12' 30.613" N	084° 56' 06.042" E
25	24° 12' 30.638" N	084° 56' 05.800" E
26	24° 12' 30.374" N	084° 56' 05.666" E
27	24° 12' 29.949" N	084° 56' 05.546" E
28	24° 12' 29.458" N	084° 56' 05.365" E
29	24° 12' 29.145" N	084° 56' 05.447" E
30	24° 12' 28.883" N	084° 56' 05.477" E
31	24° 12' 28.696" N	084° 56' 05.462" E
32	24° 12' 28.477" N	084° 56' 05.338" E
33	24° 12' 28.112" N	084° 56' 05.265" E
34	24° 12' 27.874" N	084° 56' 05.215" E
35	24° 12' 27.541" N	084° 56' 05.0795" E
36	24° 12' 27.232" N	084° 56' 05.097" E
37	24° 12' 27.035" N	084° 56' 04.908" E
38	24° 12' 26.882" N	084° 56' 04.740" E
39	24° 12' 26.887" N	084° 56' 04.660" E

40	24° 12' 26.985" N	084° 56' 04.381" E
41	24° 12' 27.035" N	084° 56' 04.151" E
42	24° 12' 27.097" N	084° 56' 03.554" E
43	24° 12' 26.966" N	084° 56' 03.387" E
44	24° 12' 27.058" N	084° 56' 02.981" E
45	24° 12' 27.088" N	084° 56' 02.578" E
46	24° 12' 27.164" N	084° 56' 02.056" E
47	24° 12' 27.371" N	084° 56' 02.127" E
48	24° 12' 27.984" N	084° 56' 01.969" E
49	24° 12' 28.326" N	084° 56' 02.186" E
50	24° 12' 28.567" N	084° 56' 01.578" E
51	24° 12' 29.265" N	084° 56' 01.675" E
52	24° 12' 29.249" N	084° 56' 02.286" E
53	24° 12' 29.594" N	084° 56' 02.311" E
54	24° 12' 29.633" N	084° 56' 02.182" E
55	24° 12' 29.571" N	084° 56' 02.138" E

LAND DETAILS

Khata no.	Plot no.
04	75
05	76
06	34

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Chatra vide letter no. 881/Khanan, dated 24.08.2024.
2	CO	:	The CO, Chatra vide letter no. 1167, dated 22.12.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatyan & Register II.

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3	DMO	:	DMO, Chatra vide memo no. 1104, dated 08.10.2024 certified that 05 other mining lease area (2.54 Acre, 3.58 Acre, 1.72 Acre, 2.74 Acre & 4.16 Acre) exists within 500 meters radius from proposed project site and total area is 18.15 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 449, dated 13.03.2023 certified that the proposed project site is outside Eco Sensitive Zone of Lawalong Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Chatra South Forest Division vide letter no. 318, dated 16.02.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Chatra District (Sl. no. 09, Page no. 69).
7	Gram Sabha	:	Gram Sabha conducted on 12.03.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Chatra vide Letter No. 1060/Khanan, dated 26.09.2024.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method
2	Quarry Area	:	0.81 Ha. (During plan period) Life of Mine – 12 year
3	Waste Generation	:	30.844 cum. 0.6 (During plan period)
4	Stripping Ratio	:	1:2.27 or 0.44
5	Working Days	:	300
6	Benches: size	:	6 m x 6 m
7	Elevation of Mine	:	452 to 447 m AMSL
8	Ground Level Elevation	:	452 m AMSL
9	Ultimate Working Depth	:	33 m
10	Water Table	:	(During pre-monsoon 399 m AMSL) (During post-monsoon 405 m AMSL)
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	16 kg Slurry explosives/day
13	Diesel/fuel	:	HSD – 232 liters / day (69.60 KL/year)

requirement	

Production Details

SUMMARY OF YEARWISE OF PRODUCTION					
Years	Production In Cum/Year	Production In Cum/Day	O.B in Cum/Year	Production In Tons/Year	Prod. In Tons. /Day
1 st	8415	28	16720	22721	76
2 nd	13585	45	0	36680	122
3 rd	24090	80	14124	65043	217
4 th	11770	39	0	31779	106
5 th	12210	41	0	32967	110
Total	70070	80 (max)	30844	189189	217 (max)

LAND USE

Existing, Proposed & Conceptual Land Use

Sl	Pattern	Existing Land Use (Ha)	Proposed Land Use (Ha)	Conceptual Land Use (Ha)	Area to be converted in the conceptual period.
1	Mining Activities	0.00	0.810	0.810	Water body
2	Dumping	0.00	0.032	0.032	Greenbelt
3	Mining Road	0.00	0.053	0.053	Water body
4	Garland drain	0.00	0.024	0.024	--
5	Settling Tank	0.00	0.004	0.004	--
6	Offices/ Store etc.	0.00	0.004	0.004	Greenbelt
7	Safety Zone	0.00	0.389	0.389	Greenbelt
8	Unutilized	1.38	0.065	0.065	Greenbelt
	TOTAL	1.38	1.38	1.38	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.389 Ha	622
2	Along Approach Road	0.350 km	464
TOTAL			1,086

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

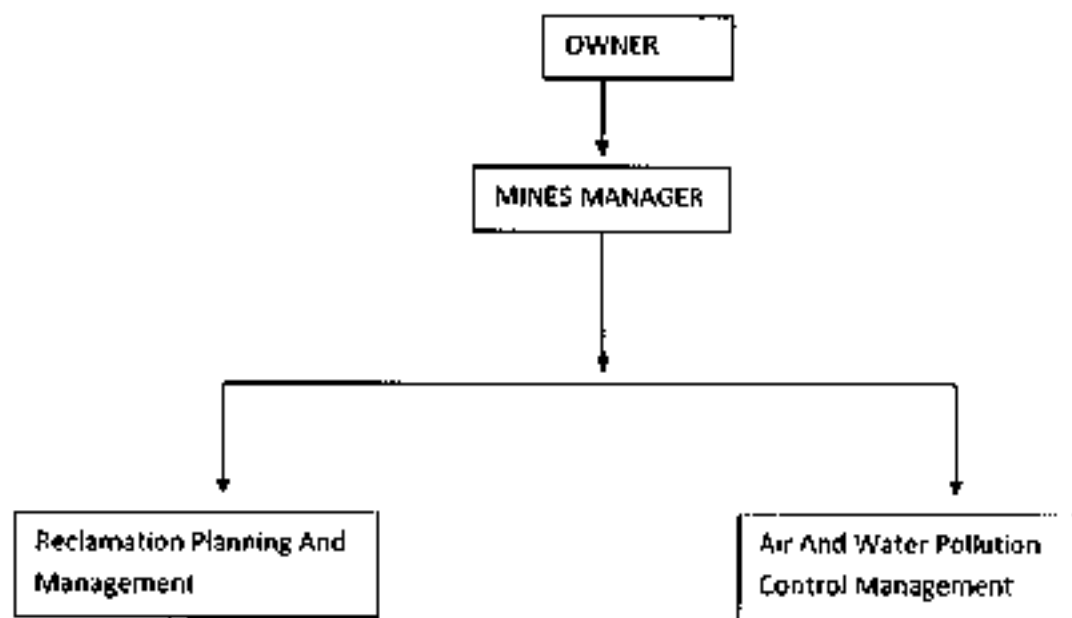
EMP BUDGET

Sl.No.	Particulars	Capital Cost In Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. (Rs. 900 per Tanker)	----	2,70,000
2	Plantation 464 X 800 = Rs 3,71,200 (Gabion Plantation along approach road) 622 X 400 = 2,48,800 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	6,20,000	62,000
3	Environmental Monitoring (One Day Monitoring) • Ambient Air 24 hrs (3 point) - Rs.27,270 • Ground Water (2 point) - Rs.12,420 • Noise 24 hrs (3 point) - Rs. 21,000 • Soil (3 point) -Rs.40,920 Total -Rs. 1,01,610 (Per Season) At least two seasons in a Year -Rs.1,01,610 x2 = Rs. 2,03,220 Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022	----	2,03,220
Total		6,20,000	5,35,220

Environment Monitoring Programme

Sl. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	One Day Monitoring (within 6 months)

2.	Water	2 stations	One Day Monitoring (within 6 months)
3.	Soil	3 stations	One Day Monitoring (within 6 months)
4.	Noise	3 stations	One Day Monitoring (within 6 months)



Solid Waste Management

30,844 cum. O.B shall be generated during the plan period which shall be backfilled within the exhausted quarry.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

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Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced
- Optimum quantity of explosives would be used.
- Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on Gaur road by using water Tankers.
- ✓ Regular repair of Haul road
- ✓ All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Hazard Identification & Risk Analysis in Stone Mining operation

S. No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the

drill hole continuously and discharges the same in a dust collector specially provided for the purpose.

- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

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The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.

- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

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- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
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- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
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- j. Slope of the Water bodies to be stabilized using gablon plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 22, 23, 24, 25 & 26.10.2024, the Committee recommends in the light of Hon'ble NGT,

Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith following specific condition :-

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).

30. Karmahi Stone Mine of M/s CDS Mining, Village : Karmahi, Thana no. : 149, Thana : Vasistnagar, Distt. : Chatra, Jharkhand (0.655 Ha.).

(Proposal no.: SIA/JH/MIN/501001 /2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 25.10.2024.

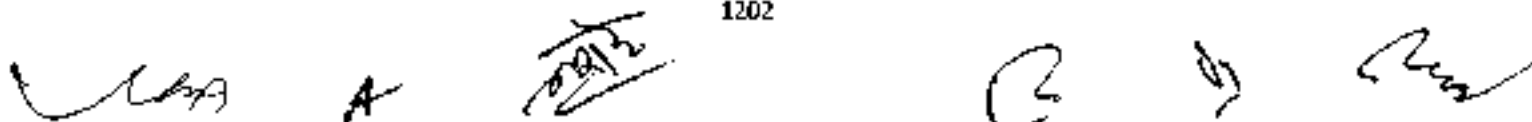
Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Terms of Reference (ToR) as per EIA notification, 2006.

ToR Application for: Proposed Capacity: 11660 Cum. (Max.) / 31482 Tons (max.) per year

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Karmahi Stone Mine
2	Lessee:	: M/S Cds Mining (1)Shri Satendra Yadav (2) Shri Amit Kumar Sahay (3) Shri Anup Ranjan
3	Lessee Address	: Village-Satgharwa, Post- Awru, Thana- Hunterganj, District- Chatra, State-Jharkand
4	Lease Area	: 0.655 Ha
5	Type of Land	: Non Forest Raiyati Land
6	Project Cost	Capital Cost: Rs. 62.92 Lakhs Recurring Cost: Rs. 5.235 Lakhs
7	EMP Budget	Capital Cost: Rs. 3.616 Lakhs Recurring Cost: Rs. 5.338 Lakhs



8	New or Expansion	:	New
9	Mineable Reserves	:	45,107 cum 1,21,789 tons
10	Mine Life	:	7 years.
11	Man power	:	29 Person
12	Water Requirement	:	4.745 KLD (Drinking: 0.435 KLD, Dust Suppression: 1.60 KLD, Plantation: 2.71 KLD)
13	Water Source	:	From Nearby villages by tankers
14	DG Set / power	:	60 KVA D.G. Set proposed
15	Crusher	:	No crusher
16	Nearest Water Body	:	Falgu river at 1.75 km W direction
17	Nearest Habitation	:	Karmahl Village – 0.37 Km in W Direction
18	Nearest Rail Station	:	Katkamasandi Railway Station at aerial distance of 45.47 km in SE direction.
19	Nearest Air Port	:	Ranchi Airport is at aerial distance of 125 km SE direction.
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer NOC. letter no.- 1505 Dated- 16/06/2023
21	Road & Highways	:	The distance of NH 22 is 1.88 km in West direction

CO-ORDINATES

Point Name	Latitude	Longitude
1	24° 19'14.669" N	084°48' 22.337" E
To		
2	24° 19'10.979" N	084° 48'22.793" E

LAND DETAILS

Khata no.	Plot no.
07	10

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Chatra vide letter no. 879/Khanan, dated 14.08.2024.
2	CO	:	The CO, Hunterganj vide letter no. 333, dated 26.04.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan & Register II.

3	DMO	:	DMO, Chatra vide memo no. 1100, dated 08.10.2024 certified that 02 other mining lease area (3.90 Acre & 4.26 Acre) and 02 LOI (2.89 Acre & 4.46 Acre) exists within 500 meters radius from proposed project site and total area is 17.13 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 2186, dated 04.11.2022 certified that the proposed project site is outside Eco Sensitive Zone of Gautambhuda Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Chatra North Forest Division vide letter no. 1505, dated 16.06.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Chatra District (Sl. no. 08, Page no. 68).
7	Gram Sabha	:	Gram Sabha conducted on 25.05.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Chatra vide Letter No. 1073/Khanan, dated 01.10.2024.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi-Mechanized Method	
2	Quarry Area	:	0.655 Ha	Life of Mine – 7 year
3	Waste Generation	:	12,740 cum	
4	Stripping Ratio	:	10:07	
5	Working Days	:	300	
6	Bench: size	:	6 m x 6 m,	
7	Elevation of Mine	:	376m RL– 187m RL	
8	Ground Level Elevation	:	187 m RL	
9	Ultimate Working Depth	:	189m	
10	Water Table	:	Post Monsoon – 2-5 mbgl Pre Monsoon – 5-10 mbgl	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	12.96 kg Slurry explosives/day	
13	Diesel/Fuel requirement	:	HSD – 246 liters / day (73.8 KL/year)	

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum
1st	5670	2.7	15309	19	51	6426
2nd	5617	2.7	15166	19	51	6314
3rd	4914	2.7	13268	16	44	0
4th	4838	2.7	13063	16	44	0
5th	11660	2.7	31482	39	105	0
Total	32699	2.7	88287	39 Max	105 Max	12740

Land Use

EXISTING, PROPOSED & CONCEPTUAL LAND USE

SL	Pattern	Existing Land Use (Ha)	Proposed Land Use (Ha)	Conceptual Land Use (Ha)	Area to be converted in the conceptual period.
1	Mining Activities	0.00	0.287	0.287	Water body
2	Office/Store etc.	0.00	0.004	0.004	Plantation
3	Dumping	0.00	0.028	0.028	Plantation
4	Mining Road	0.000	0.004	0.004	Water body
5	Garland drain	0.000	0.020	0.020	-
6	Settling Tank		0.012	0.012	-
7	Green belt/Safety Zone	0.000	0.227	0.227	Green belt
8	Unutilized	0.655	0.073	0.073	Plantation
	TOTAL	0.655	0.655	0.655	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.23 Ha	368
2	Along Approach Road	0.400m	536
TOTAL			904

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development,

✓ LHA A [Signature] 1205 [Signature] [Signature] [Signature]

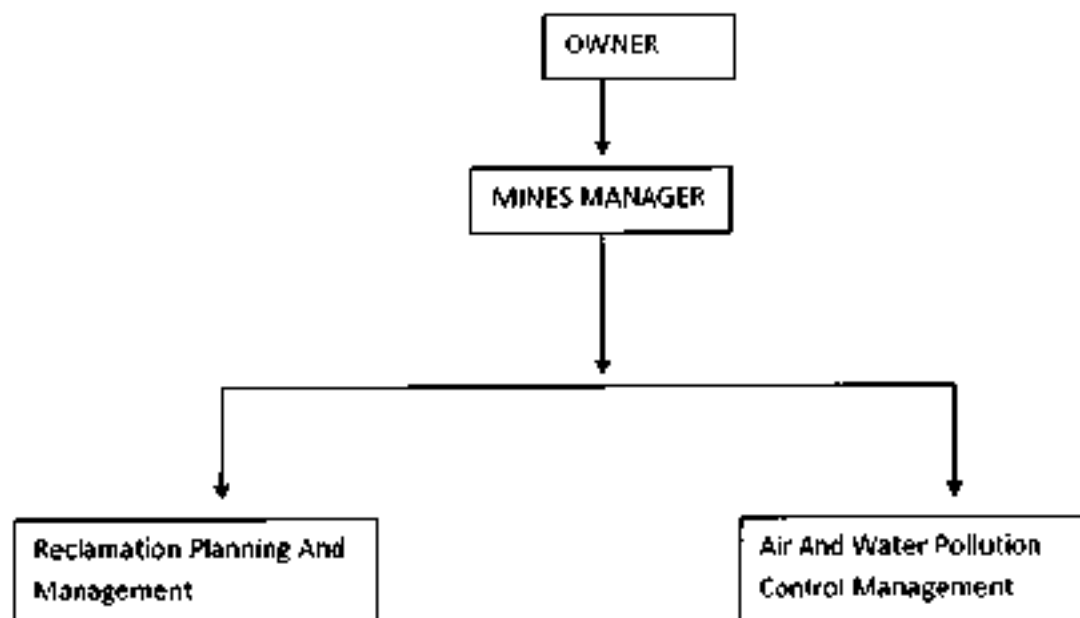
Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Budget for Environmental Management

Sl. No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. (Rs. 1000 per Tanker)	--	3,00,000
2	Plantation 268 X 800 = Rs 2,14,400 (Gablon Plantation along approach road) 368 X 400 = 1, 47,200 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	3,61,600	1,00,000
3	Environmental Monitoring (One Day Monitoring) ♦ Air 24 hrs -Rs. 27,270 ♦ Ground Water -Rs. 18,630 ♦ Noise 24 hrs - Rs. 21,000 Total -Rs. 66,900 (Per Season) At least two seasons in a Year -Rs. 66,900 x 2 = Rs. 1,33,800 <i>Source: CPCB Notification, New Delhi 23 Feb 2022</i>	--	1,33,800
Total		3,61,600	5,33,800

Environment Monitoring Programme

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Water	3 stations	6 Monthly
3.	Noise	3 stations	6 Monthly



Solid Waste Management

During first & second year 12,740 cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

Water Quality Management

- Mining will be confined to above Ground Water Table [GWT]. No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced
- Optimum quantity of explosives would be used.
- Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on Haul road by using water Tankers.
- ✓ Regular repair of Haul road
- ✓ All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Hazard Identification & Risk Analysis in Stone Mining operation

S. No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

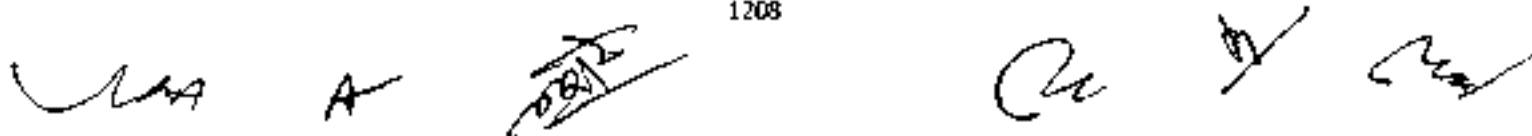
The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken.

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed



- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

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Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department.

Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.

- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.

- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 22, 23, 24, 25 & 26.10.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for Issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith following specific condition :-

- i. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naani" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).

31. Karmahi Stone Mine of M/s Kauleshwari Enterprises, Village : Karmahi, Thana no. : 147, Thana : Vasisthnagar (Jori), Distt. : Chatra, Jharkhand (1.80 Ha.).

(Proposal no.: SIA/JH/MIN/501990 /2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 25.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Terms of Reference (ToR) as per EIA notification, 2006.

ToR Application for: Proposed Capacity- 21,008 cum/annum or 56,722 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Karmahi Stone Mine Project Type – Stone Mine
2	Lessee:	: M/S Kauleshwari Enterprises Part 1: Shri Rajendra Singh Part 2: Shri Jayprakash Singh Part 3: Nitish Kumar
3	Lessee Address	: Vill.- Karmahi, Thana - Vasisthnagar (Jori), Thana No. - 147, Dist.- Chatra, (Jharkhand)
4	Lease Area	: 1.80 Ha.
5	Type of Land	: Non Forest Raiyati Land
6	Project Cost	Capital: 103.79 Lakhs Recurring: 9.12 Lakhs per year
7	EMP Budget	Capital: 7.31 Lakhs Recurring: 5.46 Lakhs per year
8	New or Expansion	: New

9	Mineable Reserves	:	cum.: 1,30,292 cum	Tonnes: 3,51,788 Tonnes
10	Mine Life	:	9 years.	
11	Man power	:	18 Person	
12	Water Requirement	:	6.42 KLD (Drinking: 0.33 KLD, Dust Suppression: 2.2 KLD, Plantation: 3.89 KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	60 KVA D.G. Set proposed	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Amanat River – 44.0 km – WS direction (arial distance).	
17	Nearest Habitation	:	Chatnla Village at 0.5 km	
18	Nearest Rail Station	:	Kathautla Railway Station is at areal distance of 44.0 km E-S direction.	
19	Nearest Air Port	:	Birsa Munda Airport is at areal distance of 122 km E-S direction.	
20	Nearest Forest	:	DFO Forest Division letter no.- 1273 Dated: 26/5/2023 certified that the distance of reserved / protected forest is more than 250 m from proposed project site.	
21	Road & Highways	:	NH -22 at 1.49 km West Direction	

CO-ORDINATES

1	Latitude	From N 24018'55.542"	To N 24019'03.754"
2	Longitude	From E 84048'23.399"	To E 84048'28.005"

LAND DETAILS

Khata no.	Plot no.
07	48, 50 & 51
08	43 & 47

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (Loi) has been issued by District Mining Officer, Chatra vide letter no. 1374/Khanan, dated 08.12.2023.
2	CO	:	The CO, Hunterganj (Chatra) vide letter no. 490, dated 15.06.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyar & Register II.

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3	DMO	:	DMO, Chatra vide memo no. 1101, dated 08.10.2024 certified that 02 other mining lease area (3.90 Acre & 4.26 Acre) and 02 LOI (1.62 Acre & 2.89 Acre) exists within 500 meters radius from proposed project site and total area is 17.13 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 1217, dated 26.06.2023 certified that the proposed project site is outside Eco Sensitive Zone of Lawalong Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Chatra North Forest Division vide letter no. 1273, dated 26.05.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Chatra District (SI no. 04, Page no. 57).
7	Gram Sabha	:	CO, Hunterganj (Chatra) vide letter no. 489, dated 15.06.2023 Informed that Gram Sabha conducted on 02.05.2023
8	Mine Plan Approval	:	Approved by District Mining Officer, Chatra vide Letter No. 578/Khanan, dated 01.06.2024
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method
2	Quarry Area	:	1.142 Ha. (During plan period) Life of Mine – 9 year
3	Waste Generation	:	27,846 cum. O.B (During plan period)
4	Stripping Ratio	:	1:2.5 or 0.4
5	Working Days	:	300
6	Bench: size	:	6 m x 6 m
7	Elevation of Mine	:	207 to 205 m AMSL
8	Ground Level Elevation	:	207 m AMSL
9	Ultimate Working Depth	:	26 m
10	Water Table	:	(During pre-monsoon 162 m AMSL) (During post-monsoon 165 m AMSL)
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	24 kg Slurry explosives/day

13	Diesel/Fuel requirement	:	HSD – 260 liters / day (78 KL/year)

Production Details

Years	Production In Cum/Year	Production In Cum/Day	O.B in Cum/Year	Production In Tons/Year	Prod. In Tons. /Day
1 st	13047	43	7696	35227	117
2 nd	15275	51	8554	41243	137
3 rd	21008	70	11596	56722	189
4 th	8400	28		22680	76
5 th	11844	39		31979	107
Total	69574	70 (Max)	27846	187850	189 (Max)

LAND USE

Existing, Proposed & Conceptual Land Use

SL	Pattern	Existing Land Use (Ha)	Proposed Land Use (Ha)	Conceptual Land Use (Ha)	Area to be converted in the conceptual period.
1	Mining Activities	0.00	1.142 (including haul road)	1.1421.142 (including haul road)	Water body
2	Offices/ Store etc.	0.00	0.004	0.004	Greenbelt
3	Mining Road	0.00	0.016	0.016	Water body
4	Garland drain	0.00	0.073	0.073	--
5	Settling Tank	0.00	0.024	0.024	--
6	Safety Zone	0.00	0.478	0.478	Greenbelt
7	Unutilized	1.8	0.069	0.069	Greenbelt
	TOTAL	1.8	1.8	1.8	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.478 Ha	764
2	Along Approach Road	0.401 km	532
TOTAL			1,296

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation.

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Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

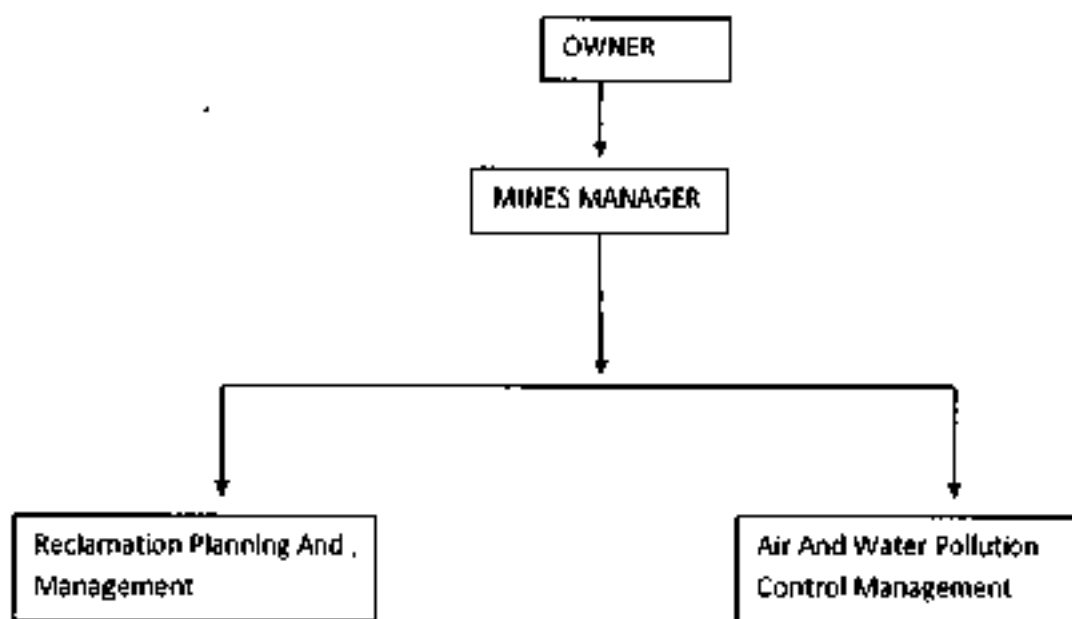
• **EMP BUDGET**

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. (Rs. 900 per Tanker)	----	2,70,000
2	Plantation 532 X 800 = Rs 4,25,600 (Gabion Plantation along approach road) 764 X 400 = 3,05,600 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	7,31,200	73,120
3	Environmental Monitoring (One Day Monitoring) - Ambient Air 24 hrs (3 point) - Rs.27,270 - Ground Water (2 point) - Rs.12,420 - Noise 24 hrs (3 point) - Rs.21,000 - Soil (3 point) -Rs.40,920 Total -Rs. 1,01,610 (Per Season) At least two seasons in a Year -Rs. 1,01,610 x2 = Rs. 2,03,220 Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022	----	2,03,220
Total		7,31,200	5,46,340

Environment Monitoring Programme

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	One Day Monitoring (within 6 months)
2.	Water	2 stations	One Day Monitoring (within 6 months)

3.	Soil	3 stations	One Day Monitoring (within 6 months)
4.	Noise	3 stations	One Day Monitoring (within 6 months)



Solid Waste Management

27,846 cum. O.B shall be generated during the plan period which shall be backfilled within the exhausted quarry.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

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- Controlled blasting would be practiced
- Optimum quantity of explosives would be used.
- Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on Haul road by using water Tankers.
- ✓ Regular repair of Haul road
- ✓ All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Hazard identification & Risk Analysis In Stone Mining operation

S. No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in

loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°.
- Unmanageable heights are not created
- Loose sides are properly dressed
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.

- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department.

Few conditions are listed below:

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- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.

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- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 22, 23, 24, 25 & 26.10.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for

Issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith following specific condition :-

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Noom" and the details of the same shall be uploaded in the MerLiFE Portal (<https://merillife.nic.in>).

32. Bhuska Stone Mine of M/s Mandhan Minerals Corporation Ltd., Village : Bhuska, Thana : Pakur, Distt.: Pakur, Jharkhand (2.185 Ha).

(Proposal no.: SIA/JH/MIN/500995/2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 25.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Terms of Reference (ToR) as per EIA notification, 2006.

ToR Application for: Proposed Capacity: 65,016 Cum. / annum or 1,88,546 TPA

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Bhuska Stone Mine
2	Lessee:	: Proponent- 1. Shri Anil Kumar Tanwani, 2. Shri Dinesh Tanwani, 3. Shri Suresh Kumar Tanwani, 4. Shri Bhavesh Tanwani, 5. Shri Piyush Tanwani,
3	Lessee Address	: R/o Sindhipara, Pakur, Jharkhand
4	Lease Area	: 2.185 Ha
5	Type of Land	: Non Forest Relyall Land
6	Project Cost	Capital Cost: Rs. 129.08 Lakhs Recurring Cost: Rs. 6.1 Lakhs
7	EMP Budget	Capital Cost: Rs. 11.712 Lakhs Recurring Cost: Rs. 6.203 Lakhs
8	New or Expansion	: New
9	Mineable Reserves	: cum.: 3,62,488 cum Tonnes: 10,51,215 tons

10	Mine Life	: 8 years.
11	Man power	: 23 Person
12	Water Requirement	: 9.14 KLD (Drinking: 0.345 KLD, Dust Suppression: 3.20 KLD, Plantation: 5.59 KLD)
13	Water Source	: From Nearby villages by tankers
14	DG Set / power	: 60 KVA D.G. Set proposed
15	Crusher	: No crusher
16	Nearest Water Body	: Turai River – 7 Km in North direction
17	Nearest Habitation	: Bhusko Village – 0.682 Km in SW Direction
18	Nearest Rail Station	: Pakur Railway Station at aerial distance of 4.61 km in NE direction.
19	Nearest Air Port	: Deoghar Airport is at aerial distance of 114.64 km SW direction.
20	Nearest Forest	: More than 250 m, as per Division Forest Officer NOC. letter no.- 153 Dated- 22/01/2022
21	Road & Highways	: The distance of Approach Road is 800m, after that this road connects to NH 133A at 3.32 km away.

CO-ORDINATES

Point Name	Longitude	Latitude
1	087° 49' 27.55858890" E	24° 36' 24.38844562" N
2	087° 49' 27.11449487" E	24° 36' 24.76180148" N
3	087° 49' 26.67238099" E	24° 36' 25.46433228" N
4	087° 49' 26.41847358" E	24° 36' 25.89992097" N
5	087° 49' 26.18638359" E	24° 36' 26.26167650" N
6	087° 49' 25.49077397" E	24° 36' 26.43539628" N
7	087° 49' 24.85315145" E	24° 36' 26.41414335" N
8	087° 49' 24.24136142" E	24° 36' 26.36779093" N
9	087° 49' 24.21188716" E	24° 36' 26.80524167" N
10	087° 49' 24.16807407" E	24° 36' 26.91025875" N
11	087° 49' 24.17824509" E	24° 36' 27.33720437" N
12	087° 49' 24.18002310" E	24° 36' 27.66710528" N
13	087° 49' 24.33569331" E	24° 36' 28.24844983" N
14	087° 49' 24.15457495" E	24° 36' 28.28598282" N
15	087° 49' 24.27123717" E	24° 36' 28.85162477" N
16	087° 49' 24.49069772" E	24° 36' 29.43428267" N
17	087° 49' 24.62689110" E	24° 36' 29.60257605" N
18	087° 49' 24.82803053" E	24° 36' 29.96378075" N
19	087° 49' 25.12598125" E	24° 36' 30.31317654" N
20	087° 49' 25.25440821" E	24° 36' 30.48594715" N
21	087° 49' 25.27933330" E	24° 36' 30.72344868" N
22	087° 49' 25.48644971" E	24° 36' 30.91175352" N
23	087° 49' 25.49553097" E	24° 36' 31.61485412" N
24	087° 49' 26.04614199" E	24° 36' 31.48970403" N

25	087° 49' 26.54831964" E	24° 36' 31.38772986" N
26	087° 49' 26.91029540" E	24° 36' 31.30661402" N
27	087° 49' 27.37508344" E	24° 36' 31.20812352" N
28	087° 49' 27.97395238" E	24° 36' 30.12767169" N
29	087° 49' 28.38243420" E	24° 36' 29.41430500" N
30	087° 49' 28.86927899" E	24° 36' 28.70741149" N
31	087° 49' 29.29122078" E	24° 36' 28.15189578" N
32	087° 49' 29.40745501" E	24° 36' 27.79114745" N
33	087° 49' 29.61779255" E	24° 36' 26.99255064" N
34	087° 49' 29.82136385" E	24° 36' 26.45464071" N
35	087° 49' 30.04164067" E	24° 36' 25.90139266" N
36	087° 49' 30.15257860" E	24° 36' 25.58842070" N
37	087° 49' 29.39717209" E	24° 36' 25.38110213" N
38	087° 49' 29.22102632" E	24° 36' 25.18348509" N
39	087° 49' 28.67938822" E	24° 36' 25.31095455" N
40	087° 49' 28.10750616" E	24° 36' 24.88297406" N

LAND DETAILS

Khata no.	Plot no.
16	880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895 & 896

STATUTORY CLEARANCES

1	LOI / Lease docs	: The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 1150/M, dated 25.07.2024.
2	CO	: The CO, Pakur vide letter no. 1299/Ra., dated 11.12.2021 has mentioned the plot no. of the project is not recorded as "Jungle-Jharl" in R.S. Khatyan & Register II.
3	DMO	: DMO, Pakur vide memo no. 1334/M, dated 21.08.2024 certified that 10 other mining lease area (6.62 Acre, 5.43 Acre, 4.93 Acre, 5.44 Acre, 5.36 Acre, 3.11 Acre, 6.27 Acre, 6.83 Acre, 5.147 Acre & 7.00 Acre) exists within 500 meters radius from proposed project site and total area is 61.539 Acre or 24.90 Ha.
4	DFO Wild Life	: DFO, Wildlife Division, Hazaribag vide letter no. 1933, dated 02.11.2021 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Lake Sanctuary.
5	DFO Territorial	: Division Forest Officer, Pakur Forest Division vide letter no. 151, dated 22.01.2022 certified that the distance of reserved / protected forest is more than 250 meters from proposed project

		site.
6	DSR	The DMD, Pakur has been certified vide memo no. 1341/M, dated 21.08.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 01, Page no. 45).
7	Gram Sabha	BDO, Pakur vide letter no 2544/Vi Dated 28.12.2021 informed that Gram Sabha conducted on 15.12.2021.
8	Mine Plan Approval	Approved by District Mining Officer, Pakur vide Memo No. 1611/M, dated 26.09.2024.
9	Qualified Person	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi-Mechanized Method	
2	Quarry Area	:	2.185 Ha	Life of Mine – 8 year
3	Waste Generation	:	24,984 cum	
4	Stripping Ratio	:	08:08	
5	Working Days	:	300	
6	Bench: size	:	6 m x 6 m,	
7	Elevation of Mine	:	63m – 53m AMSL	
8	Ground Level Elevation	:	53 AMSL	
9	Ultimate Working Depth	:	16.5 m AMSL	
10	Water Table	:	Post Monsoon – 08 m AMSL Pre Monsoon – 02m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	60.2 kg Slurry explosives/day	
13	Diesel/Fuel requirement	:	HSD – 315 liters / day (94.5 KL/year)	

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum	T.F	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.
1st	65016	2.9	188546	217	628	24934	83
2nd	44280	2.9	128412	148	428	0	0

3rd	39600	2.9	114840	132	383	0	0
4th	37620	2.9	109098	125	364	0	0
5th	32940	2.9	95526	110	318	0	0
Total	219456	2.9	636422	217 Max.	628 Max.	24934	83

Land Use Pattern

Sl	Pattern	Existing Land Use (Ha)	Proposed Land Use (Ha)	Conceptual Land Use (Ha)	Area to be converted in the conceptual period.
1	Mining Activities	0.000	1.570	1.570	Water body
2	Offices/ Store etc.	0.000	0.001	0.001	Greenbelt
3	Dumping	0.000	0.070	0.070	Greenbelt
4	Mining Road	0.000	0.000	0.000	Water body
5	Garland drain	0.000	0.030	0.030	Water body
6	Settling Tank	0.000	0.010	0.010	--
7	Green belt	0.000	0.000	0.000	Green belt
6	Safety Zone	0.000	0.500	0.500	Plantation
7	Stone Stock yards	0.000	0.000	0.000	--
8	Unutilized	2.185	0.004	0.004	--
9	Crusher	0.000	0.000	0.000	--
	TOTAL	2.185	2.185	2.185	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.500 Ha	800
2	Along Approach Road	0.800m	1600
TOTAL			1,864

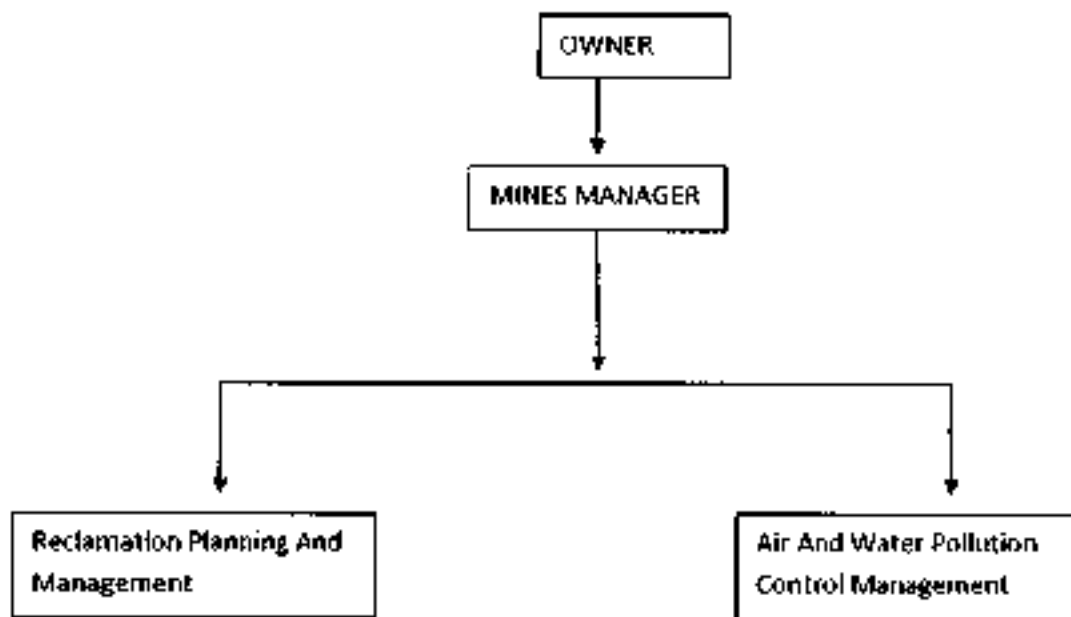
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- **Budget for Environmental Management**

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. (Rs. 1000 per Tanker)	--	3,00,000
2	Plantation 1064 X 800 = Rs 8,51,200 (Gabion Plantation along approach road) 800 X 400 = 3,20,000 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	11,71,200	1,17,120
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Total		11,71,200	6,20,340

Environment Monitoring Programme

Sl. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Water	2 stations	6 Monthly
3.	Noise	3 stations	6 Monthly
4.	Soil	3 stations	6 Monthly

Note: Monitoring period 15/10/2024 to 15/01/2025



Solid Waste Management

24,934 cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Handwritten signatures and initials are present at the bottom of the page, including a large signature on the left, a signature in the center, and several initials on the right.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced
- Optimum quantity of explosives would be used.
- Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on Haul road by using water Tankers.
- ✓ Regular repair of Haul road
- ✓ All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Hazard Identification & Risk Analysis In Stone Mining operation

S. No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily Injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator.

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned dally to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating
- Only trained drivers will be hired.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.

- I. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 22, 23, 24, 25 & 26.10.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for Issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith following specific condition :-

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).

33. Bhuska Stone Mine of M/s Mandhan Minerals Corporation Ltd., Village : Bhuska, Thana : Pakur, Distt.: Pakur, Jharkhand (2.379 Ha).

(Proposal no.: SIA/JH/MIN/S00999/2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 25.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Terms of Reference (ToR) as per EIA notification, 2006.

ToR Application for: Proposed Capacity: 50,226 Cum. / annum or 1,45,655 TPA.

Project and Location Details:

S/	Parameter	Details
1	Project Name	Bhuska Stone Mine
2	Lessee:	Proponent:- 1. Shri Anil Kumar Tanwani, 2. Shri Dinesh Tanwani, 3. Shri Suresh Kumar Tanwani, 4. Shri Bhavesh Tanwani, 5. Shri Piyush Tanwani,
3	Lessee Address	R/o Sindhipara, Pakur, Jharkhand

4	Lease Area	:	2.379 Ha
5	Type of Land	:	Non Forest Raiyati Land
6	Project Cost		Capital Cost: Rs. 132.38 Lakhs Recurring Cost: Rs. 5.25 Lakhs
7	EMP Budget	:	Capital Cost: Rs. 12.608 Lakhs Recurring Cost: Rs. 6.293 Lakhs
8	New or Expansion	:	New
9	Mineable Reserves	:	cum.: 2,73,192 cum Tonnes: 7,92,256.8 tons
10	Mine Life	:	8 years.
11	Man power	:	20 Person
12	Water Requirement	:	9.76 KLD (Drinking: 0.300 KLD, Dust Suppression: 3.20 KLD, Plantation: 6.26 KLD)
13	Water Source	:	From Nearby villages by tankers
14	DG Set / power	:	60 KVA D.G. Set proposed
15	Crusher	:	No crusher
16	Nearest Water Body	:	Turai River – 7 Km in North direction
17	Nearest Habitation	:	Bhusko Village – 0.250 Km in SW Direction, Total house – 12 & Total Population – 50.
18	Nearest Rail Station	:	Pakur Railway Station at aerial distance of 4.61 km in NE direction.
19	Nearest Air Port	:	Deoghar Airport is at aerial distance of 114.64 km SW direction.
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer NOC. letter no.- 153 Dated- 22/01/2022
21	Road & Highways	:	The distance of Approach Road is 800m, after that this road connects to NH 133A at 3.32 km away.

CO-ORDINATES

Point Name	Latitude	Longitude
1	24° 36' 13.18048376" N	087° 49' 19.77101543" E
2	24° 36' 12.70970046" N	087° 49' 20.07179018" E
3	24° 36' 12.40407450" N	087° 49' 19.85493718" E
4	24° 36' 12.00147887" N	087° 49' 19.49896703" E
5	24° 36' 11.67668101" N	087° 49' 20.29208057" E
6	24° 36' 11.28214282" N	087° 49' 20.94279349" E
7	24° 36' 10.94286617" N	087° 49' 21.45205832" E
8	24° 36' 10.67171606" N	087° 49' 21.96443130" E
9	24° 36' 10.59667107" N	087° 49' 22.15036537" E
10	24° 36' 10.39041882" N	087° 49' 22.30491334" E
11	24° 36' 10.20267390" N	087° 49' 22.72551809" E
12	24° 36' 10.10476305" N	087° 49' 22.96680008" E

13	24° 36' 10.02760565" N	087° 49' 23.05144984" E
14	24° 36' 09.39256165" N	087° 49' 22.85484743" E
15	24° 36' 08.90881105" N	087° 49' 22.80365645" E
16	24° 36' 08.68400377" N	087° 49' 22.74247451" E
17	24° 36' 08.60054695" N	087° 49' 22.68894503" E
18	24° 36' 08.23434724" N	087° 49' 22.68129764" E
19	24° 36' 08.23203010" N	087° 49' 22.31422387" E
20	24° 36' 07.90785288" N	087° 49' 22.21230280" E
21	24° 36' 07.72591777" N	087° 49' 22.16673837" E
22	24° 36' 07.60460532" N	087° 49' 22.09165794" E
23	24° 36' 07.64169630" N	087° 49' 21.71183828" E
24	24° 36' 07.62475727" N	087° 49' 21.31338424" E
25	24° 36' 07.83104712" N	087° 49' 21.33632814" E
26	24° 36' 08.05466068" N	087° 49' 20.86041918" E
27	24° 36' 08.08245665" N	087° 49' 20.28941708" E
28	24° 36' 07.73660275" N	087° 49' 20.05677101" E
29	24° 36' 07.45465984" N	087° 49' 19.92648452" E
30	24° 36' 07.27851294" N	087° 49' 19.98001664" E
31	24° 36' 07.07848786" N	087° 49' 20.10766902" E
32	24° 36' 06.93477806" N	087° 49' 20.15100479" E
33	24° 36' 06.77183040" N	087° 49' 20.13319147" E
34	24° 36' 06.38475770" N	087° 49' 19.96494855" E
35	24° 36' 06.24043508" N	087° 49' 19.88240047" E
36	24° 36' 05.89600061" N	087° 49' 19.81245208" E
37	24° 36' 05.72057483" N	087° 49' 20.15654328" E
38	24° 36' 05.70960441" N	087° 49' 20.26029031" E
39	24° 36' 05.68181658" N	087° 49' 20.32401932" E
40	24° 36' 05.13202801" N	087° 49' 20.03602031" E
41	24° 36' 04.74160696" N	087° 49' 19.83794345" E
42	24° 36' 04.09728882" N	087° 49' 19.51165318" E
43	24° 36' 03.54432094" N	087° 49' 19.19850231" E
44	24° 36' 03.57754741" N	087° 49' 18.41854279" E
45	24° 36' 03.65063697" N	087° 49' 18.04265936" E
46	24° 36' 03.69160123" N	087° 49' 17.47088445" E
47	24° 36' 04.40372837" N	087° 49' 17.52523135" E
48	24° 36' 04.44239828" N	087° 49' 17.02825332" E
49	24° 36' 04.49559371" N	087° 49' 17.02703242" E
50	24° 36' 04.55291514" N	087° 49' 17.06209812" E
51	24° 36' 04.94800654" N	087° 49' 17.07775955" E
52	24° 36' 05.53291766" N	087° 49' 16.81014020" E
53	24° 36' 05.70401685" N	087° 49' 16.44825772" E
54	24° 36' 05.81527932" N	087° 49' 16.29777178" E
55	24° 36' 06.07527875" N	087° 49' 16.70200668" E
56	24° 36' 06.52491044" N	087° 49' 16.81555595" E
57	24° 36' 06.99424403" N	087° 49' 16.99464192" E
58	24° 36' 07.01418346" N	087° 49' 17.06431904" E
59	24° 36' 06.97336247" N	087° 49' 17.11547846" E








60	24° 36' 06.95877610" N	087° 49' 17.29213091" E
61	24° 36' 06.71101013" N	087° 49' 17.49991142" E
62	24° 36' 06.50655947" N	087° 49' 17.65222824" E
63	24° 36' 06.69453389" N	087° 49' 17.77856752" E
64	24° 36' 06.83146478" N	087° 49' 17.83948224" E
65	24° 36' 06.90958915" N	087° 49' 18.20290024" E
66	24° 36' 06.82453592" N	087° 49' 18.59056367" E
67	24° 36' 06.91799657" N	087° 49' 18.62808471" E
68	24° 36' 07.45052004" N	087° 49' 18.60687772" E
69	24° 36' 07.60237905" N	087° 49' 18.54770316" E
70	24° 36' 07.69217084" N	087° 49' 18.58432198" E
71	24° 36' 07.69980871" N	087° 49' 18.78719196" E
72	24° 36' 08.28269245" N	087° 49' 18.7788871" E
73	24° 36' 08.27199309" N	087° 49' 19.04042169" E
74	24° 36' 08.25727298" N	087° 49' 19.19977402" E
75	24° 36' 08.40097863" N	087° 49' 19.27624824" E
76	24° 36' 08.41865686" N	087° 49' 19.40272423" E
77	24° 36' 08.44184799" N	087° 49' 19.68057725" E
78	24° 36' 08.60750110" N	087° 49' 19.70901556" E
79	24° 36' 08.70305476" N	087° 49' 19.67879921" E
80	24° 36' 09.14072651" N	087° 49' 19.69619579" E
81	24° 36' 09.31111905" N	087° 49' 19.30928021" E
82	24° 36' 09.50678374" N	087° 49' 19.06918760" E
83	24° 36' 09.74078780" N	087° 49' 18.91685017" E
84	24° 36' 09.75268778" N	087° 49' 18.71427402" E
85	24° 36' 09.63680306" N	087° 49' 17.99032485" E
86	24° 36' 09.58876633" N	087° 49' 17.68974639" E
87	24° 36' 09.59160382" N	087° 49' 17.41410025" E
88	24° 36' 09.65574289" N	087° 49' 17.33181109" E
89	24° 36' 09.76747872" N	087° 49' 17.30313643" E
90	24° 36' 09.95430692" N	087° 49' 17.39526784" E
91	24° 36' 10.71039590" N	087° 49' 17.39481021" E
92	24° 36' 11.09280546" N	087° 49' 17.45854083" E
93	24° 36' 11.43627178" N	087° 49' 17.55104466" E
94	24° 36' 11.80870819" N	087° 49' 17.56567713" E
95	24° 36' 11.85155092" N	087° 49' 17.79931398" E
96	24° 36' 11.86165268" N	087° 49' 18.11070528" E
97	24° 36' 12.14672260" N	087° 49' 18.13874616" E
98	24° 36' 12.14081448" N	087° 49' 18.51225553" E
99	24° 36' 12.41854764" N	087° 49' 18.55021616" E
100	24° 36' 12.79517035" N	087° 49' 19.16160924" E

LAND DETAILS

Khata no.	Plot no.
23	675 & 676

32	801 & 802
12	686 & 687

STATUTORY CLEARANCES

1	LOI / Lease docs	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 1349/M, dated 22.08.2024.
2	CO	The CO, Pakur vide letter no. 26/Ra., dated 12.01.2021 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyani & Register II also mentioned that the habitation of 12 houses at a distance of 250 meters and Pond at a distance of 300 ft of proposed project site.
3	DMD	DMD, Pakur vide memo no. 1414/M, dated 04.09.2024 certified that 02 LOI (5.75 Acre & 5.40 Acre) and 04 other mining lease area (7.00 Acre, 4.93 Acre, 5.43 Acre & 6.27 Acre) exists within 500 meters radius from proposed project site and total area is 40.66 Acre or 16.45 Ha.
4	DFO Wild Life	DFO, Wildlife Division, Hazaribag vide letter no. 1934, dated 02.11.2021 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Lake Sanctuary.
5	DFO Territorial	Division Forest Officer, Pakur Forest Division vide letter no. 153, dated 22.01.2022 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	The DMD, Pakur has been certified vide memo no. 1413/M, dated 04.09.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl no. 01, Page no. 45).
7	Gram Sabha	BDO, Pakur vide letter no. 141/Vi. Dated 20.01.2022 informed that Gram Sabha conducted on 15.01.2022.
8	Mine Plan Approval	Approved by District Mining Officer, Pakur vide Memo No. 1605/M, dated 25.09.2024.
9	Qualified Person	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	Opencast Semi-Mechanized Method








2	Quarry Area	:	2.379 Ha	Life of Mine – 8 year
3	Waste Generation	:	24,432 cum	
4	Stripping Ratio	:	07:04	
5	Working Days	:	300	
6	Bench size	:	6 m x 6 m,	
7	Elevation of Mine	:	45m – 41m AMSL	
8	Ground Level Elevation	:	41 AMSL	
9	Ultimate Working Depth	:	18.5 m AMSL	
10	Water Table	:	Post Monsoon – 03 m AMSL Pre Monsoon – 03m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	51.6 kg Slurry explosives/day	
13	Diesel/Fuel requirement	:	HSD – 274 liters / day (82.2 KL/year)	

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.
1st	26820	2.9	77778	89	259	9450	32
2nd	27630	2.9	80127	92	267	0	0
3rd	34380	2.9	99702	115	332	0	0
4th	43956	2.9	127472	147	425	14982	0
5th	50226	2.9	145655	167	486	0	0
Total	183012	2.9	530735	167 Max.	486 Max	24432	32

Land Use pattern

SL	Pattern	Existing Land Use (Ha)	Proposed Land Use (Ha)	Conceptual Land Use (Ha)	Area to be converted in the conceptual period.
1	Mining Activities	0.000	1.620	1.620	Water body
2	Offices/ Store etc.	0.00	0.001	0.001	Plantation

3	Dumping	0.00	0.070	0.070	Plantation
4	Mining Road	0.00	0.000	0.000	Water body
5	Garland drain	0.00	0.040	0.040	--
6	Settling Tank	0.00	0.008	0.008	--
7	Green belt	0.00	0.000	0.000	Green belt
8	Safety Zone	0.00	0.640	0.640	Plantation
9	Stone Stock yards	0.00	0.000	0.000	--
10	Unutilized	2.379	0.000	0.000	--
11	Crusher	0.00	0.000	0.000	
	TOTAL	2.379	2.379	2.379	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/length	No of Trees
1	Safety Zone	0.604 Ha	1024
2	Along Approach Road	0.800m	1600
TOTAL			2,624

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.
- Budget for Environmental Management**

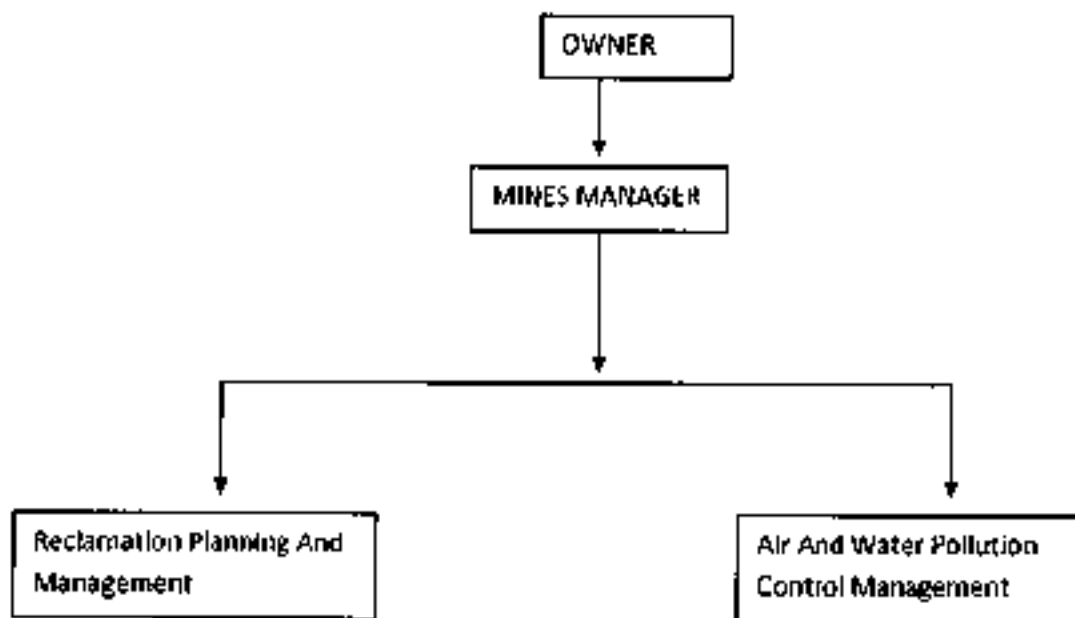
Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. (Rs. 1000 per Tanker)	—	3,00,000
2	Plantation 1600 X 800 = Rs 8,51,200 (Gabion	12,60,800	1,26,080

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
	Plantation along approach road) 1024 X 400 = 4,09,600 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)		
3	Environmental Monitoring (One Day Monitoring) - Ambient Air 24 hrs (3 point) - Rs.27,270 - Ground Water (2 point) - Rs.12,420 - Noise 24 hrs (3 point) - Rs.21,000 - Soil (3 point) -Rs.40,920 Total -Rs. 1,01,610 (Per Season) At least two seasons in a Year -Rs. 1,01,610 x 2 = Rs. 2,03,220 Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022	--	2,03,220
Total		12,60,800	6,29,300

Environment Monitoring Programme

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Water	2 stations	6 Monthly
3.	Noise	3 stations	6 Monthly
4.	Soil	3 Station	6 Monthly

Note: Monitoring period 15/10/2024 to 15/01/2025



Solid Waste Management

During first year 9450 cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced
- Optimum quantity of explosives would be used.
- Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

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Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on Haul road by using water Tankers.
- ✓ Regular repair of Haul road
- ✓ All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Hazard identification & Risk Analysis in Stone Mining operation

S. No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed

- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

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Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department.

Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.

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- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.

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- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- The Boundary Pillars of the proposed mine lease area will be maintained properly.
- One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- If any tree felling than necessary permission shall be taken from the competent authority.
- Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 22, 23, 24, 25 & 26.10.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for Issuing of TOR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith following specific condition :-

- In compliance of OM no.F.No. IA3-22/3/2024-IA,III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked

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green belt area as the part of tree plantation campaign “Ek Ped Ma Ke Naam” and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).

- II. The detailed EMP is to be prepared for the Habitation & Pond existing within an area of 500 meter radius of proposed project boundary. This EMP is to be included in EIA report.

34. Bhuska Stone Mine of Shri Dinesh Tanwani, Village : Bhuska, Thana : Pakur, Distt.: Pakur, Jharkhand (2.51 Ha).

(Proposal no.: SIA/JH/MIN/S02052/2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 25.10.2024.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Terms of Reference (ToR) as per EIA notification, 2006.

ToR Application for: Proposed Capacity: 45,453 Cum. / annum or 1,31,814 TPA.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Bhuska Stone Mine
2	Lessee:	: Proponent- Shri Dinesh Tanwani
3	Lessee Address	: S/o Indra Kumar Tanwani R/o Sindhipara, Pakur.
4	Lease Area	: 2.51 Ha
5	Type of Land	: Non Forest Raiyati Land
6	Project Cost	Capital Cost: Rs. 133.48 Lakhs Recurring Cost: Rs. 12.55 Lakhs
7	EMP Budget	Capital Cost: Rs. 11.944 Lakhs Recurring Cost: Rs. 6.226 Lakhs
8	New or Expansion	: New
9	Mineable Reserves	: cum.: 313703 cum Tonnes: 909738.7 tons
10	Mine Life	: 8 years.

11	Man power	:	21 Person
12	Water Requirement	:	9.28 KLD (Drinking: 0.31 KLD, Dust Suppression: 3.20 KLD, Plantation: 5.77 KLD)
13	Water Source	:	From Nearby villages by tankers
14	DG Set / power	:	60 KVA D.G. Set proposed
15	Crusher	:	No crusher
16	Nearest Water Body	:	Turai river at 7 km North direction.
17	Nearest Habitation	:	Bhusko Village – 0.382 Km in SW Direction.
18	Nearest Rail Station	:	Pakur Railway Station at aerial distance of 4.61 km in NE direction.
19	Nearest Air Port	:	Deoghar Airport is at aerial distance of 114.64 km SW direction.
20	Nearest Forest	:	More than 250 m, as per Division Forest Officer NOC. letter no.- 152 Dated- 22/01/2022
21	Road & Highways	:	The distance of Approach Road is 800m, after that this road connects to NH 133A at 3.32 km away.

CO-ORDINATES

Point Name	Latitude	Longitude
1	24° 36' 30.01107628" N	087° 49' 04.61564730" E
2	24° 36' 30.05742832" N	087° 49' 04.76604568" E
3	24° 36' 30.25905964" N	087° 49' 05.20194607" E
4	24° 36' 30.37030447" N	087° 49' 05.44411296" E
5	24° 36' 30.46069087" N	087° 49' 05.64294471" E
6	24° 36' 30.22155530" N	087° 49' 05.80123111" E
7	24° 36' 29.96903047" N	087° 49' 05.94649977" E
8	24° 36' 29.85083273" N	087° 49' 06.11219290" E
9	24° 36' 29.84707530" N	087° 49' 06.25661497" E
10	24° 36' 29.61829631" N	087° 49' 06.25243848" E
11	24° 36' 29.38210115" N	087° 49' 06.66788947" E
12	24° 36' 29.11616245" N	087° 49' 07.22376260" E
13	24° 36' 28.69099792" N	087° 49' 07.08519962" E
14	24° 36' 28.54538891" N	087° 49' 07.06075178" E
15	24° 36' 28.49644099" N	087° 49' 07.09174914" E
16	24° 36' 28.32445457" N	087° 49' 07.10276979" E
17	24° 36' 28.26127593" N	087° 49' 07.44840717" E
18	24° 36' 28.02728233" N	087° 49' 07.97001858" E
19	24° 36' 27.89277461" N	087° 49' 08.46685709" E
20	24° 36' 27.69546597" N	087° 49' 08.95109705" E
21	24° 36' 27.61244064" N	087° 49' 08.92225752" E
22	24° 36' 27.43112528" N	087° 49' 08.80009529" E
23	24° 36' 27.42258162" N	087° 49' 08.89824272" E
24	24° 36' 27.29252815" N	087° 49' 09.11019941" E
25	24° 36' 27.07229152" N	087° 49' 09.59258361" E

26	24° 36' 27.25550562" N	087° 49' 09.70534875" E
27	24° 36' 27.53649704" N	087° 49' 09.75024598" E
28	24° 36' 27.66844904" N	087° 49' 09.88493767" E
29	24° 36' 27.79850241" N	087° 49' 09.92879078" E
30	24° 36' 27.94089656" N	087° 49' 10.09689436" E
31	24° 36' 27.88601549" N	087° 49' 10.24900983" E
32	24° 36' 27.67414481" N	087° 49' 10.52707248" E
33	24° 36' 27.47004639" N	087° 49' 10.92801519" E
34	24° 36' 26.95451946" N	087° 49' 10.71560169" E
35	24° 36' 26.97676859" N	087° 49' 10.46435992" E
36	24° 36' 26.66528066" N	087° 49' 10.29305872" E
37	24° 36' 26.32264368" N	087° 49' 10.79880514" E
38	24° 36' 26.04823725" N	087° 49' 10.65360697" E
39	24° 36' 25.72117424" N	087° 49' 11.20258655" E
40	24° 36' 25.40134198" N	087° 49' 11.67162557" E
41	24° 36' 25.51258801" N	087° 49' 11.76084495" E
42	24° 36' 25.44074161" N	087° 49' 11.91634158" E
43	24° 36' 25.42628512" N	087° 49' 12.20034006" E
44	24° 36' 25.31085028" N	087° 49' 12.46295753" E
45	24° 36' 25.14438105" N	087° 49' 12.27384622" E
46	24° 36' 24.95968518" N	087° 49' 12.46696696" E
47	24° 36' 24.84428820" N	087° 49' 12.38874136" E
48	24° 36' 24.67341403" N	087° 49' 12.56415380" E
49	24° 36' 24.55570068" N	087° 49' 12.61635988" E
50	24° 36' 24.52912024" N	087° 49' 12.70511022" E
51	24° 36' 24.39147152" N	087° 49' 12.70824259" E
52	24° 36' 24.20730695" N	087° 49' 12.59338921" E
53	24° 36' 24.10649767" N	087° 49' 12.78795095" E
54	24° 36' 23.78212340" N	087° 49' 12.66127705" E
55	24° 36' 23.52861272" N	087° 49' 12.58927127" E
56	24° 36' 23.30611966" N	087° 49' 13.11184191" E
57	24° 36' 23.29229748" N	087° 49' 13.28511979" E
58	24° 36' 23.13061911" N	087° 49' 13.77618325" E
59	24° 36' 22.76785814" N	087° 49' 13.64576740" E
60	24° 36' 22.44338850" N	087° 49' 13.49536902" E
61	24° 36' 22.20691003" N	087° 49' 13.43257023" E
62	24° 36' 21.99136924" N	087° 49' 13.34080173" E
63	24° 36' 21.88151085" N	087° 49' 13.33680382" E
64	24° 36' 21.69395646" N	087° 49' 13.45442448" E
65	24° 36' 21.42273213" N	087° 49' 13.30924883" E
66	24° 36' 21.70042403" N	087° 49' 12.82201954" E
67	24° 36' 21.87954763" N	087° 49' 12.77858962" E
68	24° 36' 22.13408281" N	087° 49' 12.46698228" E
69	24° 36' 22.34210891" N	087° 49' 12.17213164" E
70	24° 36' 22.51129672" N	087° 49' 11.95800513" E
71	24° 36' 22.71495189" N	087° 49' 12.05509858" E
72	24° 36' 22.79606927" N	087° 49' 11.66763157" E

73	24° 36' 22.88914062" N	087° 49' 11.19136460" E
74	24° 36' 22.91155225" N	087° 49' 10.78841066" E
75	24° 36' 23.17796851" N	087° 49' 10.78688699" E
76	24° 36' 23.44078407" N	087° 49' 10.86684658" E
77	24° 36' 23.63083018" N	087° 49' 10.84390445" E
78	24° 36' 23.66311921" N	087° 49' 10.72590016" E
79	24° 36' 23.76741276" N	087° 49' 10.13705226" E
80	24° 36' 23.92732950" N	087° 49' 09.70370099" E
81	24° 36' 24.13231208" N	087° 49' 09.28143536" E
82	24° 36' 24.40191384" N	087° 49' 08.75102157" E
83	24° 36' 24.56587863" N	087° 49' 08.38782442" E
84	24° 36' 24.55753995" N	087° 49' 08.10203471" E
85	24° 36' 24.45934205" N	087° 49' 08.01110192" E
86	24° 36' 24.68100964" N	087° 49' 07.27073806" E
87	24° 36' 24.79522241" N	087° 49' 06.91018981" E
88	24° 36' 24.98355838" N	087° 49' 06.63537546" E
89	24° 36' 24.99727805" N	087° 49' 06.06949805" E
90	24° 36' 25.27991822" N	087° 49' 06.10671028" E
91	24° 36' 25.55151500" N	087° 49' 06.09874427" E
92	24° 36' 25.68784670" N	087° 49' 05.60611987" E
93	24° 36' 25.96306452" N	087° 49' 04.49486064" E
94	24° 36' 26.49537515" N	087° 49' 04.54313949" E
95	24° 36' 26.97743990" N	087° 49' 04.59534557" E
96	24° 36' 27.14918449" N	087° 49' 04.62987346" E
97	24° 36' 27.42966093" N	087° 49' 04.74712927" E
98	24° 36' 27.77542101" N	087° 49' 04.73172365" E
99	24° 36' 28.19870774" N	087° 49' 04.58760692" E
100	24° 36' 28.48595812" N	087° 49' 04.63051699" E
101	24° 36' 28.67142621" N	087° 49' 04.30325012" E
102	24° 36' 28.76118374" N	087° 49' 04.35597411" E
103	24° 36' 29.07267023" N	087° 49' 04.58927003" E
104	24° 36' 29.32898163" N	087° 49' 04.70834321" E
105	24° 36' 29.53414371" N	087° 49' 04.86799685" E

LAND DETAILS

Khata no.	Plot no.
02	476, 477, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509 (P), 510 (P), 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522 (P), 523, 538, 539, 540 & 541
19	548, 579 & 578

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STATUTORY CLEARANCES

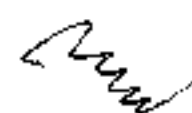
1	LOI / Lease docs	:	The Letter of Intent (LOI) has been issued by District Mining Officer, Pakur vide memo no. 1589/M, dated 24.09.2024.
2	CO	:	The CO, Pakur vide letter no. 25/Ra., dated 12.01.2021 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyon & Register II also mentioned that the habitation of 16 houses at a distance of 260 meters and Pond at a distance of 300 fit of proposed project site.
3	DMO	:	DMO, Pakur vide memo no. 1613/M, dated 26.09.2024 certified that 03 LOI (5.44 Acre, 5.879 Acre & 5.40 Acre) and 05 other mining lease area (4.93 Acre, 6.27 Acre, 5.43 Acre, 6.83 Acre & 7.00 Acre) exists within 500 meters radius from proposed project site and total area is 53.38 Acre or 21.60 Ha.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 1932, dated 02.11.2021 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Lake Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide letter no. 152, dated 22.01.2022 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 1612/M, dated 26.09.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 01, Page no. 45).
7	Gram Sabha	:	BDO, Pakur vide letter no. 140/VI. Dated 20.01.2022 informed that Gram Sabha conducted on 15.01.2022.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 1762/M, dated 16.10.2024.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi-Mechanized Method	
2	Quarry Area	:	2.51 Ha	Life of Mine – 8 year
3	Waste Generation	:	12523 cum	





4	Stripping Ratio	:	01:04
5	Working Days	:	300
6	Bench: size	:	6 m x 6 m,
7	Elevation of Mine	:	64m – 20m AMSL
8	Ground Level Elevation	:	20 AMSL
9	Ultimate Working Depth	:	44 m AMSL
10	Water Table	:	Post Monsoon – 1.2 m AMSL Pre Monsoon – 02m AMSL
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	57 424 kg Slurry explosives/day
13	Diesel/Fuel requirement	:	HSD – 288 liters / day (86.4 KL/year)

Production Details

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum	I.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.
1st	45453	2.9	131814	152	439	7843	26
2nd	36527	2.9	105928	122	353	0	0
3rd	33180	2.9	96222	111	321	0	0
4th	22361	2.9	64847	75	216	0	0
5th	42222	2.9	122444	141	408	4680	16
Total	179743	2.9	521255	152 (MAX)	439 (MAX)	12523	26

Land Use pattern

SL	Pattern	Existing Land Use (Ha)	Proposed Land Use (Ha)	Conceptual Land Use (Ha)	Area to be converted in the conceptual period.
1	Mining Activities	0.000	1.327	1.923	Water body
2	Offices/ Store etc.	0.000	0.001	0.001	Plantation

3	Dumping	0.000	0.070	0.070	Plantation
4	Mining Road	0.000	0.000	0.000	Water body
5	Garland drain	0.000	0.030	0.030	--
6	Settling Tank	0.000	0.001	0.000	--
7	Green belt	0.000	0.000	0.000	Green belt
8	Safety Zone	0.000	0.536	0.536	Plantation
9	Stone Stock yards	0.000	0.000	0.000	--
10	Unutilized	2.51	0.426	0.000	--
11	Crusher	0.000	0.000	0.000	--
	TOTAL	2.51	2.51	2.51	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.536 Ha	858
2	Along Approach Road	0.800m	1064
TOTAL			1922

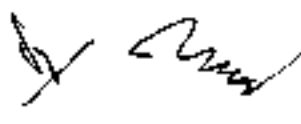
- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Budget for Environmental Management

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. (Rs. 1000 per Tanker)	--	3,00,000







Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
2	Plantation $1064 \times 800 = \text{Rs } 8,51,200$ (Gablon Plantation along approach road) $858 \times 400 = 3,43,200$ (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	11,94,400	1,19,440
3	Environmental Monitoring (One Day Monitoring) - Ambient Air 24 hrs (3 point) - Rs.27,270 - Ground Water (2 point) - Rs.12,420 - Noise 24 hrs (3 point) - Rs.21,000 - Soil (3 point) -Rs.40,920 - Total -Rs. 1,01,610 (Per Season) At least two seasons in a Year -Rs. $1,01,610 \times 2$ = Rs. 2,03,220 Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022	--	2,03,220
Total		11,94,400	6,22,660

Environment Monitoring Programme

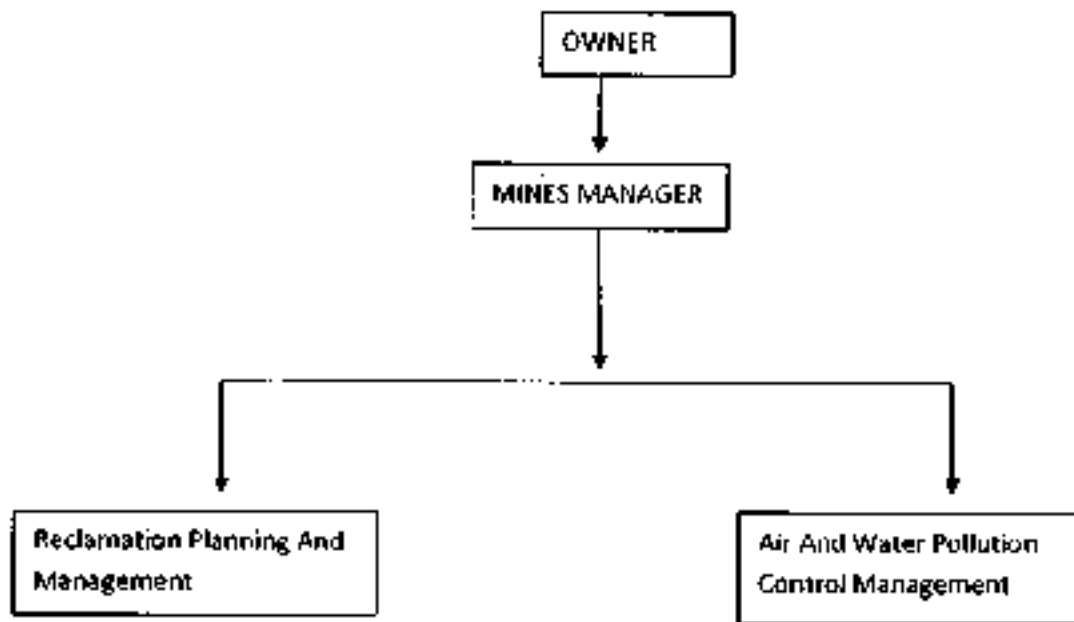
SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	6 Monthly
2.	Water	2 stations	6 Monthly
3.	Noise	3 stations	6 Monthly
4.	Soil	3 Station	6 Monthly

Note: Monitoring period 15/10/2024 to 15/01/2025







Solid Waste Management

7843cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- Controlled blasting would be practiced
- Optimum quantity of explosives would be used.
- Blasting to be done during favorable weather conditions.

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Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on Haul road by using water Tankers.
- ✓ Regular repair of Haul road
- ✓ All Trucks carrying stone outside lease area will have PUC certificate

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Hazard Identification & Risk Analysis in Stone Mining operation

S. No.	Activity	Hazard	Probability	Severity	Score ^a
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: ^aScore 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created

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- Loose sides are properly dressed
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

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Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.

- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.

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- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 22, 23, 24, 25 & 26.10.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith following specific condition :-

- i. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked

green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).

- II. The detailed EMP is to be prepared for the Habitation & Pond existing within an area of 500 meter radius of proposed project boundary. This EMP is to be included in EIA report.

35. Stone Deposit of Golpur no. -85 & Khaksa no. - 84 of M/s Tridev Engicon Pvt. Ltd., Village : Golpur no. -85 & Khaksa no. - 84, P.O. : Pakuria, Distt.: Pakur, Jharkhand (3.08 Ha).

(Proposal no.: SIA/JN/MIN/502114 /2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

Project Sector: 1(a) Mining of Minerals, Category: B1.

Application for Terms of Reference (re-appraisal of Environment Clearance issued by DEIAA, Pakur).

The project has been granted EC by DEIAA, Pakur vide letter no. 205/DEIAA dated 20.11.2017.

As per O.M. dated 28th April 2023 issued by MOEF & CC projects which have been granted EC by DEIAA are to be reappraised by SEIAA / SEAC.

This is re-appraisal of the EC issued by DEIAA, Pakur which has been taken up for consideration on 25.10.2024. As per O.M. dated 12.12.18 issued by MOEF & CC projects fall in category B2.

Existing baseline condition as per monitoring report submitted by PP is as follows PM₁₀-90 $\mu\text{g}/\text{m}^3$ PM_{2.5}-55 $\mu\text{g}/\text{m}^3$ SO₂-21.1 NO₂- 25.8 $\mu\text{g}/\text{m}^3$. All the data are within the permissible limit.

Dust suppression is being carried out on regular basis.

Greenbelt Developed.

Production detail as per memo no. 2322/M, dated 16.10.2023 by DMO, Pakur is within the permissible limit of EC.

The compliance report of previous EC has been certified by Regional Office –cum-Laboratory, Dumka vide ref. no. 2195, dated 14.10.2023.

Project and Location Details:

Sl	Parameter	Details
1	Project Name	Stone Deposit of Golpur No.-85 & Khaksa No.- 84 Project Type – Stone Mine DEIAA to SEIAA Transfer Case
2	Lessee:	M/s Tridev Engicon Pvt. Ltd. Director – Shri Ravi Shankar Kumar
3	Lessee Address	Village – Golpur No.-85 & Khaksa NO. 84, Thana- Pakuria, District- Pakur, Jharkhand
4	Lease Area	3.08Ha
5	Type of Land	Non Forest Raiyati Land
6	Project Cost	Capital Cost: 69.70 Lakhs Recurring Cost: 10.41 Lakhs/Year
7	EMP Budget	Capital Cost: 9.2 Lakhs Recurring Cost: 6.55 Lakhs/Year
8	New or Expansion	New
9	Mineable Reserves	5,00,020 cum 13,50,050 Tonnes
10	Mine Life	7 years.
11	Man power	28 Person
12	Water Requirement	9.54 KLD (Drinking: 0.42 KLD, Dust Suppression: 3.92 KLD, Plantation: 5.20 KLD)
13	Water Source	From Nearby villages by tankers
14	DG Set / power	60 KVA D.G. Set proposed
15	Crusher	No crusher
16	Nearest Water Body	Brahmani River – 3.50 km – South direction. (aerial distance).
17	Nearest Habitation	Khaksa No. 84
18	Nearest Rail Station	Pakdaha Harinsing Railway Station is 8.0 km (aerial distance).
19	Nearest Air Port	Deoghar, Airport at 97 km.
20	Nearest Forest	DFO Pakur forest division, Letter no.- 1736 Dated: 01.12.2016 certified that the distance of reserved / protected forest is more than 250 m from proposed project site.
21	Road & Highways	NH-114A at 8.0 km (aerial distance).

CO-ORDINATES

Point ID	Latitude	Longitude

1	24° 17' 06.57115707" N	087° 38' 31.50422173" E
2	24° 17' 07.20156520" N	087° 38' 32.15040568" E
3	24° 17' 08.01061271" N	087° 38' 33.02492349" E
4	24° 17' 08.99818429" N	087° 38' 34.03176916" E
5	24° 17' 09.19390478" N	087° 38' 33.87310345" E
6	24° 17' 09.60465972" N	087° 38' 33.97838675" E
7	24° 17' 10.28612755" N	087° 38' 34.47467283" E
8	24° 17' 10.92076704" N	087° 38' 35.04205132" E
9	24° 17' 10.71085673" N	087° 38' 35.48049692" E
10	24° 17' 10.50984499" N	087° 38' 36.29759867" E
11	24° 17' 09.89233339" N	087° 38' 36.30050294" E
12	24° 17' 08.99372025" N	087° 38' 36.12404707" E
13	24° 17' 08.74683966" N	087° 38' 35.95611471" E
14	24° 17' 08.45397867" N	087° 38' 35.81265334" E
15	24° 17' 07.87099971" N	087° 38' 35.59203426" E
16	24° 17' 08.05331992" N	087° 38' 35.31932829" E
17	24° 17' 06.87772794" N	087° 38' 34.62672109" E
18	24° 17' 05.76905885" N	087° 38' 34.06225792" E
19	24° 17' 05.36618536" N	087° 38' 34.46119145" E
20	24° 17' 05.61936706" N	087° 38' 35.02271947" E
21	24° 17' 05.95462313" N	087° 38' 35.68164046" E
22	24° 17' 05.86940592" N	087° 38' 35.78892728" E
23	24° 17' 05.26208304" N	087° 38' 35.77362302" E
24	24° 17' 04.28870939" N	087° 38' 35.70737186" E
25	24° 17' 04.06183086" N	087° 38' 34.74649276" E
26	24° 17' 04.06181161" N	087° 38' 34.22070518" E
27	24° 17' 03.68108918" N	087° 38' 34.00248830" E

28	24° 17' 03.74968085" N	087° 38' 33.64401327" E
29	24° 17' 02.71009840" N	087° 38' 33.86474682" E
30	24° 17' 02.33681903" N	087° 38' 33.72398772" E
31	24° 17' 01.02758509" N	087° 38' 33.34865892" E
32	24° 17' 00.36789019" N	087° 38' 33.40842446" E
33	24° 16' 59.64423764" N	087° 38' 32.76908658" E
34	24° 17' 00.12883942" N	087° 38' 32.29554987" E
35	24° 17' 00.56151877" N	087° 38' 31.38280415" E
36	24° 17' 00.99414489" N	087° 38' 30.93653995" E
37	24° 17' 01.17884222" N	087° 38' 30.99346305" E
38	24° 17' 01.54431562" N	087° 38' 29.86462327" E
39	24° 17' 01.64690391" N	087° 38' 28.87678927" E
40	24° 17' 01.84993922" N	087° 38' 28.71795835" E
41	24° 17' 02.57710416" N	087° 38' 28.80350261" E
42	24° 17' 03.12549589" N	087° 38' 29.25422657" E
43	24° 17' 03.38781089" N	087° 38' 29.63292291" E
44	24° 17' 03.71694144" N	087° 38' 29.00251031" E
45	24° 17' 04.19661221" N	087° 38' 29.57336163" E
46	24° 17' 04.69763721" N	087° 38' 30.09188061" E
47	24° 17' 04.82862537" N	087° 38' 30.51760283" E
48	24° 17' 04.96578687" N	087° 38' 30.85187920" E
49	24° 17' 05.44604334" N	087° 38' 31.34518580" E
50	24° 17' 06.17347244" N	087° 38' 32.09909675" E

LAND DETAILS

Village	Khata no.	Plot no.
Golpur no. 85	6, 10, 29 & 34	227, 228, 229 & 230

Khaksa no. 84	41, 147 & 160	6553, 6554, 6555, 6556, 6557 & 6559

STATUTORY CLEARANCES

1	LOI / Lease docs	: Lease deed : 07.09.2019 to 06.09.2029.
2	CO	: The CO, Pakuria (Pakur) vide letter no. 784/Ra. dated 16.09.2023 has mentioned the plot no. of the project is not recorded as "Jungle Jhari" in R.S. Khatyan & Register II.
3	DMO	: DMO, Pakur vide memo no. 2323/M, dated 16.10.2023 certified that 01 other mining lease area (31.33 Acre) exists within 500 meters radius from proposed project site.
4	DFO Wild Life	: DFO -cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide memo no.: 1883, dated 29.09.2023 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	: DFO, Pakur Forest Division vide letter no. 1736, dated 01.12.2016 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	: The DMO, Pakur has been certified vide memo no. 1736/M, dated 15.10.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (SI. no. 115 & 108, Page no. 139).
7	Gram Sabha	: Gram Sabha conducted on 05.08.2016
8	Mine Plan Approval	: i. Approved by District Mining Officer, Pakur vide Memo No. 1807/M, dated 18.10.2024. ii. Approved by Deputy Director Mines, Santhal Pargana Circle, Dumka vide Letter No. 433/DDM, dated 19.09.2017.
9	Qualified Person	: Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.
10	Production Report	: Production figure issued by DMO, Pakur vide memo no. 2322/M, dated 16.10.2023.
11	Compliance report of previous EC	: Compliance report of previous EC has been certified by Regional Office -cum-Laboratory, Dumka vide ref. no. 2195, dated 14.10.2023.
12	Previous Environmental Clearance (EC)	: Previous EC granted by DEIAA, Pakur vide letter no. 205/DEIAA dated 20.11.2017.








13	Consent to Establish (CTE)	:	CTE Issued by JSPCB vide Ref. no. : JSPCB/HO/RNC/CTE-6644736 /2020/22, dated 10.01.2020.
14	Consent to Operate (CTO)	:	CTO Issued by JSPCB vide Ref. no. : JSPCB/RO/DMK/CTO-7376108/2020/12, dated 05.02.2020.

Working Details

1	Mining Method	:	Opencast Mechanized Method
2	Quarry Area	:	2.28Ha Life of Mine – 7 Years *Note – Life of mine is calculated for remaining reserve i.e. 9,91,110.06 tonnes.
3	Waste Generation	:	13,795 cum.
4	Stripping Ratio	:	1:17.89 or 0.056
5	Working Days	:	300
6	Bench: size	:	6 m x 6 m
7	Elevation of Mine	:	111 to 106 m AMSL
8	Ground Level Elevation	:	111 m AMSL
9	Ultimate Working Depth	:	26 m
10	Water Table	:	During pre-monsoon 61.8m AMSL (During post-monsoon 62.2 m AMSL)
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	22.24 kg Slurry explosives/day
13	Diesel/Fuel requirement	:	HSD – 260liters / day (78 KL/year)

Production Details

(PREVIOUS PLAN PERIOD)

SUMMARY OF YEARWISE PRODUCTION (NEXT PLAN PERIOD)

Year	Production of Stone / Year			Per Day Production		Removal of O.B.	
	Cum	T.F.	Tonnes	Cum	Tonnes	Cum	Production per day cum (O.B.)
Development Year (2024-2025)	48205	2.7	130154	161	434	13795	46
Development Year (2025-2026)	49600	2.7	133920	165	446	0	0
Development Year	49135	2.7	132665	164	442	0	0

(2026-2027)							
Development Year (2027-2028)	49860	2.7	134622	166	449	0	0
Development Year (2028-2029)	49896	2.7	134719	166	449	0	0
Total	246696	2.7	666079	164	444	13795	46

LAND USE

Existing, Proposed & Conceptual Land Use

SL	Pattern	Existing Land Use (Ha)	Proposed Current Plan Period (Ha)	Proposed Land Use at End of Life of Mine (Ha)	Land Usage at Conceptual Stage
1	Mining Area	0.377	2.280	2.280	Water Body
2	Office /Store	0.000	0.000	0.000	
3	Dump Yard	0.000	0.000	0.000	-
4	Garland Drain	0.000	0.050	0.050	Garland Drain
5	Safety Zone	0.000	0.730	0.730	Plantation
6	Settling Tank	0.000	0.000	0.000	
7	Unutilized	2.703	0.020	0.020	Plantation
8	Crusher	0.000	0.000	0.000	
	TOTAL	3.080	3.080	3.0800	-

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.73 Ha	1168
2	Along Approach Road	0.851km	566
TOTAL			1,734

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable

species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

• **EMP BUDGET**

Sl.No.	Particulars	Capital Cost In Rs.	Recurring Cost In Rs. per year
1	Water facility for Dust Suppression, watering plants etc. (Rs. 1200 per Tanker)	----	3,60,000
2	Plantation 800 X 566 = Rs 4,52,800 (Gabion Plantation along approach road) 400 X 1,168 = Rs. 4,67,200 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	9,20,000	92,000
3	Environmental Monitoring (One Day Monitoring) ♦ Ambient Air 24 hrs (3 point) - Rs.27,270 ♦ Ground Water (2 point) - Rs.12,420 ♦ Noise 24 hrs (3 point) - Rs.21,000 ♦ Soil (3 point) -Rs.40,920 Total -Rs. 1,01,610 (Per Season) At least two seasons in a Year -Rs.1,01,610 x2 = Rs. 2,03,220 Source: Central Pollution Control Board Notification, New Delhi, the 23rd February, 2022		2,03,220
Total		9,20,000	6,55,220

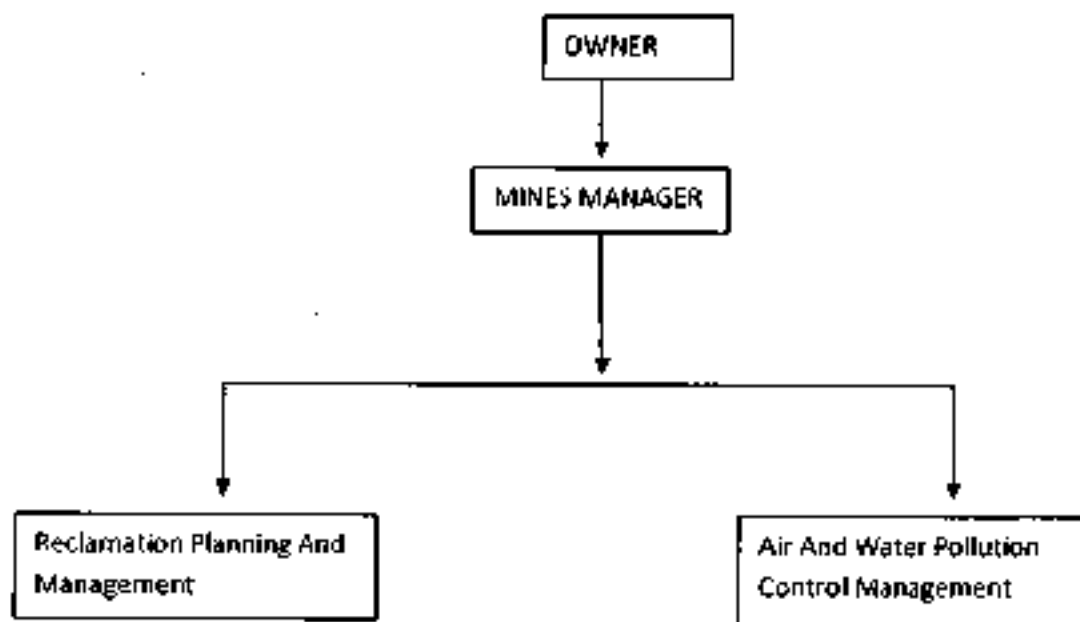
Environment Monitoring Plan (post operation)

Environment management cell







FUNCTIONS OF ENVIRONMENT MONITORING CELL

- **Supervision:** Managed by Mines Manager with a qualified technical team.
- **Personnel:** Includes skilled, semi-skilled, unskilled, and other third parties.
- **Responsibilities:**
 - ✓ Implement environmental control measures.
 - ✓ Oversee reclamation planning and management.
 - ✓ Manage air and water pollution control.
 - ✓ Liaise with state and central statutory agencies.
 - ✓ Develop greenbelt areas.
- **Performance Review:** Assess corporate environmental performance and report non-compliances.
- **Remedial Actions:** Suggest and implement actions for exceeding pollution limits.
- **Coordination:**

Collect health statistics for workers and local population.

Act as a bridge for project implementation and Project Authorities

Facilitate afforestation efforts.

Environment Monitoring Programme

Sl. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	3 stations	One Day Monitoring (within 6 months)
2.	Water	2 stations	One Day Monitoring (within 6 months)
3.	Soil	3 stations	One Day Monitoring (within 6 months)

4.	Noise	3 stations	One Day Monitoring (within 6 months)

Solid Waste Management

13,795 cum. O.B shall be generated during the next plan period which shall be backfilled within the exhausted quarry.

Water Quality Management

- ♦ Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- ♦ Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- ♦ Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- ♦ Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- ♦ Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- ♦ Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

Drilling – Drilling is a major source for emission of dust & Noxious Gases.

Mitigation measures:

Use of Sharp Drill Bits

Wet Drilling – Water will be sprinkled on the site where drilling has to be done.

Blasting – Blasting generate gases & dust. This effect would be mitigated by following measures.

- ♦ Controlled blasting would be practiced
- ♦ Optimum quantity of explosives would be used.
- ♦ Blasting to be done during favorable weather conditions.

Operation of Diesel Equipment's – They generate Noxious gases. It will be ensured that all mining machineries & transport vehicles would be repaired & maintained regularly.

Loading of Product on Truck – Water will be sprinkled on blasted stone mass before they are loaded to trucks for transport.

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on Haul road by using water Tankers.
- ✓ Regular repair of Haul road
- ✓ All Trucks carrying stone outside lease area will have PUC certificate.

RISK ASSESSMENT

The hazard identification and risk analysis is done using qualitative method:

Hazard Identification & Risk Analysis in Stone Mining operation

S. No.	Activity	Hazard	Probability	Severity	Score ^a
1	Temporary	Unintended	Very	Catastrophic	5

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	Storage of Explosives	Explosion	Unlikely		
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

NOTE: *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

The risk score lies between 5 to 20. Hence, the risk in stone quarry ranges from Medium to Low-Risk Rank and hence the risk is "Acceptable"

Preventive Measures:

Slope Failure

Face instability gives rise to rock falls or slides. Face instability can arise because of adverse geological faulting or poor work methods. Those at greatest risk will be workers engaged in loading material and driving vehicles. To manage the face stability, the following measures will be taken:

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No loose stone or debris will be permitted to remain on the top of the bench or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

Drilling is common to the mining of stones. The main hazards linked to the drilling operations are:

- Falls from the edge of a bench
- Dust generation during drilling
- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the

face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.
- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
- Provision of portable rail fencing between the drilling operations and the edge of the bench
- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
- In case due to any reason, wet drilling is not possible (due to non-availability of water), exhaust/ vacuum system will be provided which removes the dust from the drill hole continuously and discharges the same in a dust collector specially provided for the purpose.
- Drilling machine shall be fitted with dust suppression, collection and disposal arrangement
- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

Drilling operations give rise to harmful levels of noise. It is created by both drilling the hole and the operation of the drill rig itself.

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

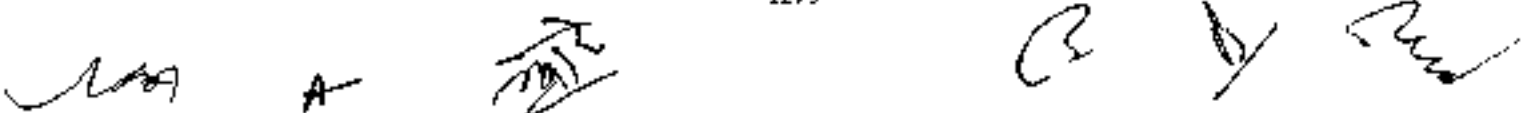
The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

Most of the accidents from blasting occur due to the projectiles and mainly due to overcharging of the shot holes as a result of certain special features of the local ground.

Flying rocks are encountered during initial and final blasting operations. Noise and dust also generated during blasting. Following control measures should be taken:

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- Blast hole geometry shall be properly designed.
- Blast site shall be wetted before and after blasting operations are completed.
- Only optimum quantity of permissible explosives shall be used so that the vibrations do not damage the structures/houses if the quarrying operations are close to human habitation.
- Blasting shall be conducted only during favourable weather conditions and only during the day time and permissible hours.
- While carrying out blasting operations near habitations, wide publicity will be given in the local area through announcement and other available media so that local people become aware of the blasting activities being undertaken in the area and take appropriate precautions.
- The vibrations should be monitored periodically in consultation with the local Mining authorities.

Handling of Explosives

Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper training in explosive handling and use will be allowed for blasting operations.

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of explosive suitable for good fragmentation and the continuity of the Initiator are but a few of the steps necessary to ensure its safe use.
- Poorly designed shots can result in misfires, early ignition and flying rock.

The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- Explosives shall be conveyed in special containers
- Explosives and detonators shall not be carried in the same container
- The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

To avoid such instances, it will be ensured that workers shall be trained and involved in the risk management process and tell them to share their experience regarding what to do, to reduce risk.

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use

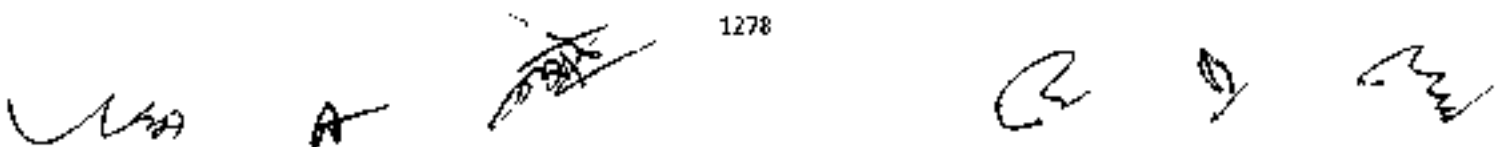
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- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as clothing, helmet, goggles or other garments or equipments designed to protect from Injury or Infection will be provided to working personnel.

Monitoring Period – 15.10.2024 to 15.01.2025.

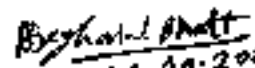
Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 22, 23, 24, 25 & 26.10.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith following specific condition :-

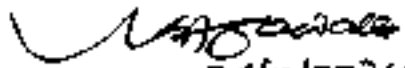
- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- II. The plot no. 230/1277 is being not considered at this stage as in the approved mine plan plot no. 230/1227 has been given in place of 230/1277. Therefore, PP needs to provide proper justification from competent authority in this regard with final EIA / EMP report.



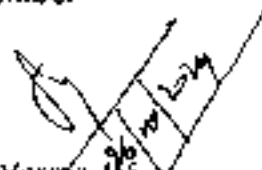
The meeting concluded with thanks to all present.


26/10/2024
Ashok Kumar Dubey, IFS (Retd.)
Member


26.10.2024
Dr. Ajay Govind Bhatt
Member


26/10/2024
Miranjan Lal Agarwalla
Member


Dr. Raju Kumar
Member


26/10/24
Srikant Verma, IFS
Member Secretary


26/10/24
Ashok Kumar Singh, IFS (Retd.)
Chairman

I. Statutory Compliance

- i. The project proponent shall obtain all necessary clearance/ permission from all relevant agencies including town planning authority before commencement of work. All the construction shall be done in accordance with the local building byelaws.
- ii. The approval of the Competent Authority shall be obtained for structural safety of buildings due to earthquakes, adequacy of fire fighting equipment etc as per National Building Code including protection measures from lightening etc
- iii. The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1980, in case of the diversion of forest land for non-forest purpose involved in the project.
- iv. In the writ petition (Civil) no. 202/1995, T.N. Godaverman Thirumulpad vs union of India and ors. the Hon'ble Supreme Court passed an order dated 03.06.2022 " National Park or Wildlife Sanctuary must have an ESZ of minimum 01 km in which the activities prescribed and proscribed in the guidelines of 09th February, 2011 shall be strictly adhered to ".
- v. The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.
- vi. The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State Pollution Control Board/ Committee.
- vii. The project proponent shall obtain the necessary permission for drawl of ground water / surface water required for the project from the competent authority.
- viii. A certificate of adequacy of available power from the agency supplying power to the project along with the load allowed for the project should be obtained
- ix. All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department shall be obtained, as applicable, by project proponents from the respective competent authorities.
- x. The provisions of the Solid Waste (Management) Rules, 2016, e-Waste (Management) Rules, 2016, and the Plastics Waste (Management) Rules, 2016 shall be followed.
- xi. The project proponent shall follow the ECBC/ECBC-R prescribed by Bureau of Energy Efficiency, Ministry of Power strictly.
- xii. Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel (kerosene/gas) for cooking.

safe drinking water, medical health care, etc. The housing may be in the form of temporary structures to be removed after completion of the project.

- xiii. Provision of drinking water, waste water disposal, solid wastes management and primary health facilities shall be ensured for labour force. Proper sanitation facilities shall be provided at the construction site to prevent health related problems. Domestic as well as sanitary wastes from construction camps shall be cleared regularly.
- xiv. All the labourers to be engaged for construction works shall be screened for health and adequately treated before issue of work permits. The contractor shall ensure periodic health check-up of construction workers.
- xv. All vehicles/equipment deployed during construction phase shall be ensured in good working condition and shall conform to applicable air and noise emission standards. These shall be operated only during non-peak hours.
- xvi. Accumulation/stagnation of water shall be avoided ensuring vector control.
- xvii. Water during construction phase should be preferred from Municipal supply.
- xviii. Unskilled construction labourers shall be recruited from the local areas.
- xix. Monitoring of ground water table and quality once in three months shall be carried out. Construction of tube wells, bore wells shall be strictly regulated.
- xx. Adequate provision shall be made to cater the parking needs. Parking spaces standards as given in "Manual on Norms and Standards for Environmental Clearance of Large Construction Projects" issued by Ministry of Environment and Forests, Government of India shall be adopted.
- xxi. Rest room facilities shall be provided for service population.
- xxii. Water body falling within premises (if any) shall not be lined or no embankment shall be cemented. The water bodies, if any, shall be kept in natural conditions without disturbing the ecological habitat.
- xxiii. Construction shall conform to the requirements of local seismic regulations. The project proponent shall obtain permission for the plans and designs including structural design, standards and specifications of all construction work from concerned authority.

II. Air quality monitoring and preservation

- i. Notification GSR 94(E) dated 25.01.2018 of MoEF&CC regarding Mandatory Implementation of Dust Mitigation Measures for Construction and Demolition Activities for projects requiring Environmental Clearance shall be complied with.
- ii. A management plan shall be drawn up and implemented to contain the current exceedance in ambient air quality at the site.
- iii. The project proponent shall install system to carryout Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants

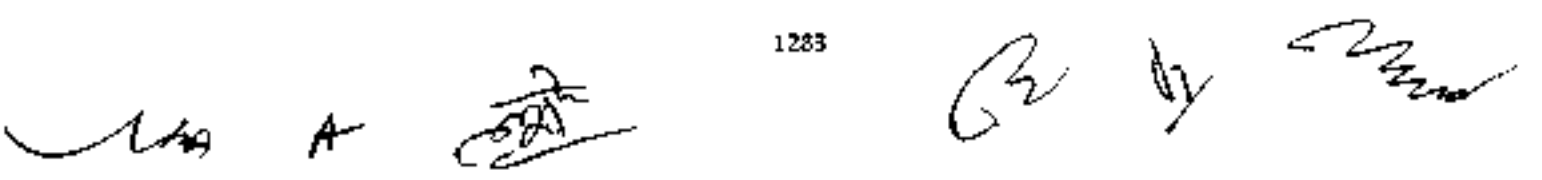
released (e.g. PM10 and PM25) covering upwind and downwind directions during the construction period.

- iv. Diesel power generating sets proposed as source of backup power should be of enclosed type and conform to rules made under the Environment (Protection) Act, 1986. The height of stack of DG sets should be equal to the height needed for the combined capacity of all proposed DG sets. Use of low sulphur diesel. The location of the DG sets may be decided with in consultation with State Pollution Control Board.
- v. Construction site shall be adequately barricaded before the construction begins. Dust, smoke & other air pollution prevention measures shall be provided for the building as well as the site. These measures shall include screens for the building under construction, continuous dust/ wind breaking walls all around the site (at least 3 meter height). Plastic/tarpaulin sheet covers shall be provided for vehicles bringing in sand, cement, murrum and other construction materials prone to causing dust pollution at the site as well as taking out debris from the site.
- vi. Sand, murrum, loose soil, cement, stored on site shall be covered adequately so as to prevent dust pollution.
- vii. Wet jet shall be provided for grinding and stone cutting.
- viii. Unpaved surfaces and loose soil shall be adequately sprinkled with water to suppress dust.
- ix. All construction and demolition debris shall be stored at the site (and not dumped on the roads or open spaces outside) before they are properly disposed. All demolition and construction waste shall be managed as per the provisions of the Construction and Demolition Waste Rules 2016.
- x. The diesel generator sets to be used during construction phase shall be low sulphur diesel type and shall conform to Environmental (Protection) prescribed for air and noise emission standards.
- xi. The gaseous emissions from DG set shall be dispersed through adequate stack height as per CPCB standards. Acoustic enclosure shall be provided to the DG sets to mitigate the noise pollution. Low sulphur diesel shall be used. The location of the DG set and exhaust pipe height shall be as per the provisions of the Central Pollution Control Board (CPCB) norms.
- xii. For indoor air quality the ventilation provisions as per National Building Code of India.

III. Water quality monitoring and preservation

- i. The natural drain system should be maintained for ensuring unrestricted flow of water. No construction shall be allowed to obstruct the natural drainage through the site, on wetland and water bodies. Check dams, bio-swales, landscape, and

- other sustainable urban drainage systems (SUDS) are allowed for maintaining the drainage pattern and to harvest rain water.
- ii. Buildings shall be designed to follow the natural topography as much as possible. Minimum cutting and filling should be done.
 - iii. Total fresh water use shall not exceed the proposed requirement as provided in the project details.
 - iv. The quantity of fresh water usage, water recycling and rainwater harvesting shall be measured and recorded to monitor the water balance as projected by the project proponent. The record shall be submitted to the Regional Office, MoEF&CC along with six monthly Monitoring reports.
 - v. A certificate shall be obtained from the local body supplying water, specifying the total annual water availability with the local authority, the quantity of water already committed, the quantity of water allotted to the project under consideration and the balance water available. This should be specified separately for ground water and surface water sources, ensuring that there is no impact on other users.
 - vi. At least 20% of the open spaces as required by the local building bye-laws shall be pervious. Use of Grass pavers, paver blocks with at least 50% opening, landscape etc. would be considered as pervious surface.
 - vii. Installation of dual pipe plumbing for supplying fresh water for drinking, cooking and bathing etc and other for supply of recycled water for flushing, landscape irrigation, car washing, thermal cooling, conditioning etc. shall be done.
 - viii. Use of water saving devices/ fixtures (viz. low flow flushing systems; use of low flow faucets tap aerators etc) for water conservation shall be incorporated in the building plan.
 - ix. Separation of grey and black water should be done by the use of dual plumbing system. In case of single stack system separate recirculation lines for flushing by giving dual plumbing system be done.
 - x. Water demand during construction should be reduced by use of pre-mixed concrete, curing agents and other best practices referred.
 - xi. The local bye-law provisions on rain water harvesting should be followed. If local byelaw provision is not available, adequate provision for storage and recharge should be followed as per the Ministry of Urban Development Model Building Byelaws, 2016. Rain water harvesting recharge pits/storage tanks shall be provided for ground water recharging as per the CGWB norms.
 - xii. A rain water harvesting plan needs to be designed where the recharge bores of minimum one recharge bore per 5,000 square meters of built up area and storage capacity of minimum one day of total fresh water requirement shall be provided. In areas where ground water recharge is not feasible, the rain water should be

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harvested and stored for reuse. The ground water shall not be withdrawn without approval from the Competent Authority.

- xiii. All recharge should be limited to shallow aquifer.
- xiv. No ground water shall be used during construction phase of the project.
- xv. Any ground water dewatering should be properly managed and shall conform to the approvals and the guidelines of the CGWA in the matter. Formal approval shall be taken from the CGWA for any ground water abstraction or dewatering.
- xvi. The quantity of fresh water usage, water recycling and rainwater harvesting shall be measured and recorded to monitor the water balance as projected by the project proponent. The record shall be submitted to the Regional Office, MoEF&CC along with six monthly Monitoring reports.
- xvii. Sewage shall be treated in the STP with tertiary treatment. The treated effluent from STP shall be recycled/re-used for flushing, AC make up water and gardening. As proposed, no treated water shall be disposed in to municipal drain.
- xviii. No sewage or untreated effluent water would be discharged through storm water drains.
- xix. Onsite sewage treatment of capacity of treating 100% waste water to be installed based on the MBBR/MBR/SBR technology. The installation of the Sewage Treatment Plant (STP) shall be certified by an independent expert and a report in this regard shall be submitted to the Ministry before the project is commissioned for operation. Treated waste water shall be reused on site for landscape, flushing, cooling tower, and other end-uses. Excess treated water shall be discharged as per statutory norms notified by Ministry of Environment, Forest and Climate Change. Natural treatment systems shall be promoted.
- xx. Periodical monitoring of water quality of treated sewage shall be conducted. Necessary measures should be made to mitigate the odour problem from STP.
- xxi. Sludge from the onsite sewage treatment, including septic tanks, shall be collected, conveyed and disposed as per the Ministry of Urban Development, Central Public Health and Environmental Engineering Organization (CPHEO) Manual on Sewerage and Sewage Treatment Systems, 2013.

IV. Noise monitoring and prevention

- i. Ambient noise levels shall conform to residential area/commercial area/industrial area/silence zone both during day and night as per Noise Pollution (Control and Regulation) Rules, 2000. Incremental pollution loads on the ambient air and noise quality shall be closely monitored during construction phase. Adequate measures shall be made to reduce ambient air and noise level during construction phase, so as to conform to the stipulated standards by CPCB / SPCB.

- ii. Noise level survey shall be carried as per the prescribed guidelines and report in this regard shall be submitted to Regional Officer of the Ministry as a part of six-monthly compliance report.
- iii. Acoustic enclosures for DG sets, noise barriers for ground-run bays, ear plugs for operating personnel shall be implemented as mitigation measures for noise impact due to ground sources.

V. Energy Conservation measures

- i. Compliance with the Energy Conservation Building Code (ECBC) of Bureau of Energy Efficiency shall be ensured. Buildings in the States which have notified their own ECBC, shall comply with the State ECBC.
- ii. Outdoor and common area lighting shall be LED.
- iii. Concept of passive solar design that minimize energy consumption in buildings by using design elements, such as building orientation, landscaping, efficient building envelope, appropriate fenestration, increased day lighting design and thermal mass etc. shall be incorporated in the building design. Wall, window, and roof u-values shall be as per ECBC specifications.
- iv. Energy conservation measures like installation of CFLs/ LED for the lighting the area outside the building should be integral part of the project design and should be in place before project commissioning.
- v. Solar, wind or other Renewable Energy shall be installed to meet electricity generation equivalent to 1% of the demand load or as per the state level/ local building bye-laws requirement, whichever is higher.
- vi. Solar power shall be used for lighting in the apartment to reduce the power load on grid. Separate electric meter shall be installed for solar power. Solar water heating shall be provided to meet 20% of the hot water demand of the commercial and institutional building or as per the requirement of the local building bye-laws, whichever is higher. Residential buildings are also recommended to meet its hot water demand from solar water heaters, as far as possible.

VI. Waste Management

- i. A certificate from the competent authority handling municipal solid wastes, indicating the existing civic capacities of handling and their adequacy to cater to the M.S.W. generated from project shall be obtained.
- ii. Disposal of muck during construction phase shall not create any adverse effect on the neighboring communities and be disposed taking the necessary precautions for general safety and health aspects of people, only in approved sites with the approval of competent authority.

- iii. Separate wet and dry bins must be provided in each unit and at the ground level for facilitating segregation of waste. Solid waste shall be segregated into wet garbage and inert materials.
- iv. Organic waste compost/ Vermiculture pit/ Organic Waste Converter within the premises with a minimum capacity of 0.3 kg /person/day must be installed.
- v. All non-biodegradable waste shall be handed over to authorized recyclers for which a written tie up must be done with the authorized recyclers.
- vi. Any hazardous waste generated during construction phase, shall be disposed off as per applicable rules and norms with necessary approvals of the State Pollution Control Board.
- vii. Use of environment friendly materials in bricks, blocks and other construction materials, shall be required for at least 20% of the construction material quantity. These include Fly Ash bricks, hollow bricks, AACs, Fly Ash Lime Gypsum blocks, Compressed earth blocks, and other environment friendly materials.
- viii. Fly ash should be used as building material in the construction as per the provision of Fly Ash Notification of September, 1999 and amended as on 27th August, 2003 and 25th January, 2016. Ready mixed concrete must be used in building construction.
- ix. Any wastes from construction and demolition activities related thereto shall be managed so as to strictly conform to the Construction and Demolition Rules, 2016.
- x. Used CFLs and TFLs should be properly collected and disposed off/sent for recycling as per the prevailing guidelines/ rules of the regulatory authority to avoid mercury contamination.

VII. Green Cover

- i. No tree can be felled/transplant unless exigencies demand. Where absolutely necessary, tree felling shall be with prior permission from the concerned regulatory authority. Old trees should be retained based on girth and age regulations as may be prescribed by the Forest Department. Plantations to be ensured species (cut) to species (planted).
- ii. A minimum of 1 tree for every 80 sqm of land should be planted and maintained. The existing trees will be counted for this purpose. The landscape planning should include plantation of native species. The species with heavy foliage, broad leaves and wide canopy cover are desirable. Water intensive and/or invasive species should not be used for landscaping.
- iii. Where the trees need to be cut with prior permission from the concerned local Authority, compensatory plantation in the ratio of 1:10 (i.e. planting of 10 trees for every 1 tree that is cut) shall be done and maintained. Plantations to be ensured species (cut) to species (planted). Area for green belt development shall be provided as per the details provided in the project document.

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- iv. Topsoil should be stripped to a depth of 20 cm from the areas proposed for buildings, roads, paved areas, and external services. It should be stockpiled appropriately in designated areas and reapplied during plantation of the proposed vegetation on site.

VIII. Transport

- i. A comprehensive mobility plan, as per MoUD best practices guidelines (URDPFI), shall be prepared to include motorized, non-motorized, public, and private networks. Road should be designed with due consideration for environment, and safety of users. The road system can be designed with these basic criteria.
 - a. Hierarchy of roads with proper segregation of vehicular and pedestrian traffic.
 - b. Traffic calming measures.
 - c. Proper design of entry and exit points
 - d. Parking norms as per local regulation
- ii. Vehicles hired for bringing construction material to the site should be in good condition and should have a pollution check certificate and should conform to applicable air and noise emission standards be operated only during non-peak hours.
- iii. A detailed traffic management and traffic decongestion plan shall be drawn up to ensure that the current level of service of the roads within a 05 kms radius of the project is maintained and improved upon after the implementation of the project. This plan should be based on cumulative impact of all development and increased habitation being carried out or proposed to be carried out by the project or other agencies in this 05 Kms radius of the site in different scenarios of space and time and the traffic management plan shall be duly validated and certified by the State Urban Development department and the P.W.D./ competent authority for road augmentation and shall also have their consent to the implementation of components of the plan which involve the participation of these departments.

IX. Human Health Issues

- i. All workers working at the construction site and involved in loading, unloading, carriage of construction material and construction debris or working in any area with dust pollution shall be provided with dust mask.
- ii. For indoor air quality the ventilation provisions as per National Building Code of India.
- iii. Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.
- iv. Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may

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be in the form of temporary structures to be removed after the completion of the project.

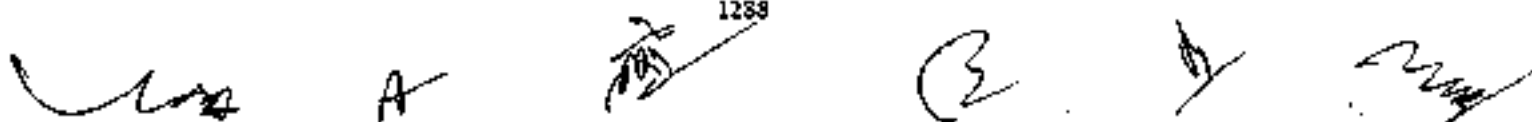
- v. Occupational health surveillance of the workers shall be done on a regular basis.
- vi. A First Aid Room shall be provided in the project both during construction and operations of the project.

X. Corporate Environment Responsibility

- i. The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No. 22-65/2017-IA.III dated 1st May 2018, as applicable, regarding Corporate Environment Responsibility.
- ii. The company shall have a well laid down environmental policy duly approved by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest / wildlife norms / conditions. The company shall have defined system of reporting infringements / deviation / violation of the environmental / forest / wildlife norms / conditions and / or shareholders / stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.
- iii. A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.
- iv. Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.

XI. Miscellaneous

- i. The project proponent shall prominently advertise it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days indicating that the project has been accorded environment clearance and the details of MoEF&CC/SEIAA website where it is displayed.
- ii. The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
- iii. The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.
- iv. The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the

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ministry of Environment, Forest and Climate Change at environment clearance portal.

- v. The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.
- vi. The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.
- vii. The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
- viii. The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.
- ix. No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).
- x. Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.
- xi. The Ministry / SEIAA / SEAC may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory
- xii. The Ministry / SEIAA / SEAC reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
- xiii. It shall be mandatory for the project management to submit six (06) monthly compliance report in respect of the stipulated prior environmental clearance terms and conditions in hard copies and soft copies to the regulatory authority concerned Regional Office of MoEF & CC at Ranchi and Jharkhand State Pollution Control Board (J.S.P.C.B.), Ranchi / CPCB / SEIAA.
- xiv. The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.
- xv. Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under section 16 of the National Green Tribunal Act, 2010.
- xvi. The Prescribed EC is valid as per Notification no. S.O. 1807(E) dated 12.04.2022 of MoEF&CC, Govt. of India.

I. Statutory compliance

- i. This Environmental Clearance (EC) is subject to orders/ judgment of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, Common Cause Conditions as may be applicable.
- ii. In the writ petition (Civil) no. 202/1995, T.N. GodavermanThirumulpadvs union of India and ors. theHon'ble Supreme Court passed an order dated 03.06.2022 " National Park or Wildlife Sanctuary must have an ESZ of minimum 01 km in which the activities prescribed and prescribed in the guidelines of 09th February, 2011 shall be strictly adhered to ".
- iii. The Project proponent complies with all the statutory requirements and judgement of Hon'ble Supreme Court dated 2nd August,2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India &Ors before commencing the mining operations.
- iv. The Hon'ble Supreme Court vide order dated 08.01.2020 in W.P. (Civil) No.114/2014 in the matter of Common Cause vs. Union of India has directed that the area which has been mined should be restored so that grass and other vegetation including trees can grow in the mining area for the benefit of animals.
"The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.
- v. The State Government concerned shall ensure that mining operation shall not be commenced till the entire compensation levied, if any, for illegal mining paid by the Project Proponent through their respective Department of Mining & Geology in strict compliance of Judgement of Hon'ble Supreme Court dated 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India &Ors.
- vi. This Environmental Clearance shall become operational only after receiving formal NBWL Clearance from MoEF&CC subsequent to the recommendations of the Standing Committee of National Board for Wildlife, if applicable to the Project.
- vii. This Environmental Clearance shall become operational only after receiving formal Forest Clearance (FC) under the provision of Forest Conservation Act, 1980, if applicable to the Project.
- viii. Project Proponent (PP) shall obtain Consent to Operate after grant of EC and effectively implement all the conditions stipulated therein. The mining activity shall not commence prior to obtaining Consent to Establish / Consent to Operate from the concerned State Pollution Control Board/Committee.

- ix. The PP shall adhere to the provision of the Mines Act, 1952, Mines and Mineral (Development & Regulation), Act, 2015 and rules & regulations made there under. PP shall adhere to various circulars issued by Directorate General Mines Safety (DGMS) and Indian Bureau of Mines from time to time.
- x. The Project Proponent shall obtain consents from all the concerned land owners, before start of mining operations, as per the provisions of MMDR Act, 1957 and rules made there under in respect of lands which are not owned by it.
- xi. The Project Proponent shall follow the mitigation measures provided in MoEF&CC's Office Memorandum No. Z-11013/57/2014-IAJ (M), dated 29th October, 2014, titled "Impact of mining activities on Habitations-Issues related to the mining Projects wherein Habitations and villages are the part of mine lease areas or Habitations and villages are surrounded by the mine lease area".
- xii. The Project Proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water and from CGWA for withdrawal of ground water for the project.
- xiii. A copy of EC letter will be marked to concerned Panchayat / local NGO etc. If any, from whom suggestion / representation has been received while processing the proposal.
- xiv. State Pollution Control Board/Committee shall be responsible for display of this EC letter at its Regional office, District Industries Centre and Collector's office/ Tehsildar's Office for 30 days.
- xv. The Project Authorities should widely advertise about the grant of this EC letter by printing the same in at least two local newspapers, one of which shall be in vernacular language of the concerned area. The advertisement shall be done within 7 days of the issue of the clearance letter mentioning that the instant project has been accorded EC and copy of the EC letter is available with the State Pollution Control Board/Committee and web site of the Ministry of Environment, Forest and Climate Change ([www. Environment clearance.nic.in](http://www.Environmentclearance.nic.in)). A copy of the advertisement may be forwarded to the concerned MoEF& CC Regional Office for compliance and record.
- xvi. The Project Proponent shall inform the MoEF&CC for any change in ownership of the mining lease. In case there is any change in ownership or mining lease is transferred than mining operation shall only be carried out after transfer of EC as per provisions of the para 11 of EIA Notification, 2006 as amended from time to time.

II. Air quality monitoring and preservation

- i. The Project Proponent shall install a minimum of 3 (three) online Ambient Air Quality Monitoring Stations with 1 (one) in upwind and 2 (two) in downwind direction based on long term climatological data about wind direction such that an angle of 120° is made between the monitoring locations to monitor critical

parameters, relevant for mining operations, of air pollution viz. PM10, PM2.5, NO2, CO and SO2 etc. as per the methodology mentioned in NAAQS Notification No. B-29016/20/90/PCUI, dated 18.11.2009 covering the aspects of transportation and use of heavy machinery in the impact zone. The ambient air quality shall also be monitored at prominent places like office building, canteen etc. as per the site condition to ascertain the exposure characteristics at specific places. The above data shall be digitally displayed within 03 months in front of the main Gate of the mine site.

- ii. Effective safeguard measures for prevention of dust generation and subsequent suppression (like regular water sprinkling, metalled road construction etc.) shall be carried out in areas prone to air pollution wherein high levels of PM10 and PM2.5 are evident such as haul road, loading and unloading point and transfer points. The Fugitive dust emissions from all sources shall be regularly controlled by installation of required equipments/ machineries and preventive maintenance. Use of suitable water-soluble chemical dust suppressing agents may be explored for better effectiveness of dust control system. It shall be ensured that air pollution level conform to the standards prescribed by the MoEF&CC/ Central Pollution Control Board.

III. Water quality monitoring and preservation

- i. In case, immediate mining scheme envisages intersection of ground water table, then Environmental Clearance shall become operational only after receiving formal clearance from CGWA. In case, mining operation involves intersection of ground water table at a later stage, then PP shall ensure that prior approval from CGWA and MoEF&CC is in place before such mining operations. The permission for intersection of ground water table shall essentially be based on detailed hydro-geological study of the area.
- ii. Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintain. The natural water bodies and or streams which are flowing in an around the village, should not be disturbed. The Water Table should be nurtured so as not to go down below the pre-mining period. In case of any water scarcity in the area, the Project Proponent has to provide water to the villagers for their use. A provision for regular monitoring of water table in open dug well located in village should be incorporated to ascertain the impact of mining over ground water table. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.
- iii. Project Proponent shall regularly monitor and maintain records w.r.t. ground water level and quality in and around the mine lease by establishing a network of existing wells as well as new piezo-meter installations during the mining operation in consultation with Central Ground Water Authority/ State Ground Water

Department. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.

- iv. The Project Proponent shall undertake regular monitoring of natural water course/ water resources/ springs and perennial nallahs existing/ flowing in and around the mine lease and maintain its records. The project proponent shall undertake regular monitoring of water quality upstream and downstream of water bodies passing within and nearby/ adjacent to the mine lease and maintain its records. Sufficient number of gullies shall be provided at appropriate places within the lease for management of water. PP shall carryout regular monitoring w.r.t. pH and included the same in monitoring plan. The parameters to be monitored shall include their water quality vis-à-vis suitability for usage as per CPCB criteria and flow rate. It shall be ensured that no obstruction and/ or alteration be made to water bodies during mining operations without justification and prior approval of MoEF&CC. The monitoring of water courses/ bodies existing in lease area shall be carried out four times in a year viz. pre- monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the record of monitored data may be sent regularly to Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground Water Authority and Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board. Clearly showing the trend analysis on six-monthly basis.
- v. Quality of polluted water generated from mining operations which include Chemical Oxygen Demand (COD) in mines run-off; acid mine drainage and metal contamination in runoff shall be monitored along with Total Suspended Solids (TDS), Dissolved Oxygen (DO), pH and Total Suspended Solids (TSS). The monitored data shall be uploaded on the website of the company as well as displayed at the project site in public domain, on a display board, at a suitable location near the main gate of the Company. The circular No. J- 20012/1/2006-IAJ (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change may also be referred in this regard.
- vi. Project Proponent shall plan, develop and implement rainwater harvesting measures on long term basis to augment ground water resources in the area consultation with Central Ground Water Board/ State Groundwater Department. A report on amount of water recharged needs to be submitted to Regional Office MoEF&CC annually
- vii. Industrial waste water (workshop and waste water from the mine) should be properly collected and treated so as to conform to the notified standards prescribed from time to time. The standards shall be prescribed through Consent to Operate (CTO) issued by concerned State Pollution Control Board (SPCB). The workshop effluent shall be treated after its initial passage through Oil and grease trap.

- viii. The water balance/water auditing shall be carried out and measure for reducing the consumption of water shall be taken up and reported to the Regional Office of the MoEF&CC and State Pollution Control Board/Committee.

IV. Noise and vibration monitoring and prevention

- i. The peak particle velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines.
- ii. The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day /night hours.
- iii. The Project Proponent shall take measures for control of noise levels below 85 dBA in the work environment. The workers engaged in operations of HEMM, etc. should be provided with ear plugs /muffs. All personnel including laborers working in dusty areas shall be provided with protective respiratory devices along with adequate training, awareness and information on safety and health aspects. The PP shall be held responsible in case it has been found that workers/ personals/ laborers are working without personal protective equipment.

V. Mining Plan

- i. The Project Proponent shall adhere to the working parameters of mining plan which was submitted at the time of EC appraisal wherein year-wise plan was mentioned for total excavation i.e. quantum of mineral, waste, over burden, inter burden and top soil etc.. No change in basic mining proposal like mining technology, total excavation, mineral & waste production, lease area and scope of working (viz. method of mining, overburden & dump management, O.B & dump mining, mineral transportation mode, ultimate depth of mining etc.) shall not be carried out without prior approval of the Ministry of Environment, Forest and Climate Change, which entail adverse environmental impacts, even if it is a part of approved mining plan modified after grant of EC or granted by State Govt. in the form to Short Term Permit (STP), Query license or any other name.
- ii. The Project Proponent shall get the Final Mine Closure Plan along with Financial Assurance approved from Indian Bureau of Mines/Department of Mining & Geology as required under the Provision of the MMDR Act, 1957 and Rules/ Guidelines made there under. A copy of approved final mine closure plan shall be submitted within 2 months of the approval of the same from the competent authority to the concerned Regional Office of the Ministry of Environment, Forest and Climate Change for record and verification.

- iii. The land-use of the mine lease area at various stages of mining scheme as well as at the end-of-life shall be governed as per the approved Mining Plan. The excavation vis-à-vis backfilling in the mine lease area and corresponding afforestation to be raised in the reclaimed area shall be governed as per approved mining plan. PP shall ensure the monitoring and management of rehabilitated areas until the vegetation becomes self sustaining. The compliance status shall be submitted half-yearly to the MoEF&CC and its concerned Regional Office.

VI. Land reclamation

- i. The Overburden (O.B.) generated during the mining operations shall be stacked at earmarked OB dump site(s) only and it should not be kept active for a long period of time. The physical parameters of the OB dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by D.G.M.S w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of top soil/OB dumps. The topsoil shall be used for land reclamation and plantation.
- ii. The reject/waste generated during the mining operations shall be stacked at earmarked waste dump site(s) only. The physical parameters of the waste dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of waste dumps.
- iii. The reclamation of waste dump sites shall be done in scientific manner as per the Approved Mining Plan cum Progressive Mine Closure Plan.
- iv. The slope of dumps shall be vegetated in scientific manner with suitable native species to maintain the slope stability, prevent erosion and surface run off. The selection of local species regulates local climatic parameters and help in adaptation of plant species to the microclimate. The gullies formed on slopes should be adequately taken care of as it impacts the overall stability of dumps. The dump mass should be consolidated with the help of dozer/ compactors thereby ensuring proper filling/ leveling of dump mass. In critical areas, use of geo textiles/ geo-membranes / clay liners / Bentonite etc. shall be undertaken for stabilization of the dump.
- v. The Project Proponent shall carry out slope stability study in case the dump height is more than 30 meters. The slope stability report shall be submitted to concerned regional office of MoEF&CC.
- vi. Catch drains, settling tanks and ponds of appropriate size shall be constructed around the mine working, mineral yards and Top Soil/OB/Waste dumps to prevent run off of water and flow of sediments directly into the water bodies (Nallah/ River/ Pond etc.). The collected water should be utilized for watering the mine area, roads, green belt development, plantation etc. The drains/ sedimentation

sumps etc. shall be de-silted regularly, particularly after monsoon season, and maintained properly.

- vii. Check dams of appropriate size, gradient and length shall be constructed around mine pit and OB dumps to prevent storm run-off and sediment flow into adjoining water bodies. A safety margin of 50% shall be kept for designing of sump structures over and above peak rainfall (based on 50 years data) and maximum discharge in the mine and its adjoining area which shall also help in providing adequate retention time period thereby allowing proper settling of sediments/ silt material. The sedimentation pits/ sumps shall be constructed at the corners of the garland drains.
- viii. The top soil, if any, shall temporarily be stored at earmarked site(s) within the mine lease only and should not be kept unutilized for long. The physical parameters of the top soil dumps like height, width and angle of slope shall be governed as per the approved Mining Plan and as per the guidelines framed by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of dumps. The topsoil shall be used for land reclamation and plantation purpose.

VII. Transportation

- i. No Transportation of the minerals shall be allowed in case of roads passing through villages/ habitations. In such cases, PP shall construct a 'bypass' road for the purpose of transportation of the minerals leaving an adequate gap (say at least 200 meters) so that the adverse impact of sound and dust along with chances of accidents could be mitigated. All costs resulting from widening and strengthening of existing public road network shall be borne by the PP in consultation with nodal State Govt. Department. Transportation of minerals through road movement in case of existing village/ rural roads shall be allowed in consultation with nodal State Govt. Department only after required strengthening such that the carrying capacity of roads is increased to handle the traffic load. The pollution due to transportation load on the environment will be effectively controlled and water sprinkling will also be done regularly. Vehicular emissions shall be kept under control and regularly monitored. Project should obtain Pollution Under Control (PUC) certificate for all the vehicles from authorized pollution testing centers.
- ii. The Main haulage road within the mine lease should be provided with a permanent water sprinkling arrangement for dust suppression. Other roads within the mine lease should be wetted regularly with tanker-mounted water sprinkling system. The other areas of dust generation like crushing zone, material transfer points, material yards etc. should invariably be provided with dust suppression arrangements. The air pollution control equipments like bag filters, vacuum suction hoods, dry fogging system etc. shall be installed at Crushers, belt-conveyors and other areas prone to air pollution. The belt conveyor should be

fully covered to avoid generation of dust while transportation. PP shall take necessary measures to avoid generation of fugitive dust emissions.

VIII. Green Belt

- i. The Project Proponent shall develop greenbelt in 7.5m wide safety zone all along the mine lease boundary as per the guidelines of CPCB in order to arrest pollution emanating from mining operations within the lease. The whole Green belt shall be developed within first 5 years starting from windward side of the active mining area. The development of greenbelt shall be governed as per the EC granted by the Ministry irrespective of the stipulation made in approved mine plan.
- ii. The Project Proponent shall carryout plantation/ afforestation in backfilled and reclaimed area of mining lease, around water body, along the roadsides, in community areas etc. by planting the native species in consultation with the State Forest Department/ Agriculture Department/ Rural development department/ Tribal Welfare Department/ Gram Panchayat such that only those species be selected which are of use to the local people. The CPCB guidelines in this respect shall also be adhered. The density of the trees should be around 2500 saplings per Hectare. Adequate budgetary provision shall be made for protection and care of trees.
- iii. The Project Proponent shall make necessary alternative arrangements for livestock feed by developing grazing land with a view to compensate those areas which are coming within the mine lease. The development of such grazing land shall be done in consultation with the State Government. In this regard, Project Proponent should essentially implement the directions of the Hon'ble Supreme Court with regard to acquisition of grazing land. The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun, should be scrupulously guarded/ protected against felling and plantation of such trees should be promoted.
- iv. The Project Proponent shall undertake all precautionary measures for conservation and protection of endangered flora and fauna and Schedule-I species during mining operation. A Wildlife Conservation Plan shall be prepared for the same clearly delineating action to be taken for conservation of flora and fauna. The Plan shall be approved by Chief Wild Life Warden of the State Govt.
- v. And implemented in consultation with the State Forest and Wildlife Department. A copy of Wildlife Conservation Plan and its Implementation status (annual) shall be submitted to the Regional Office of the Ministry.

IX. Public hearing and human health issues

- i. The Project Proponent shall appoint an Occupational Health Specialist for Regular as well as Periodical medical examination of the workers engaged in the mining activities, as per the DGMS guidelines. The records shall be maintained properly.

PP shall also carryout Occupational health check-ups in respect of workers which are having ailments like BP, diabetes, habitual smoking, etc. The check-ups shall be undertaken once in six months and necessary remedial/ preventive measures be taken. A status report on the same may be sent to MoEF&CC Regional Office and DGMS on half-yearly basis.

- ii. The Project Proponent must demonstrate commitment to work towards 'Zero Harni' from their mining activities and carry out Health Risk Assessment (HRA) for identification workplace hazards and assess their potential risks to health and determine appropriate control measures to protect the health and wellbeing of workers and nearby community. The proponent shall maintain accurate and systematic records of the HRA. The HRA for neighborhood has to focus on Public Health Problems like Malaria, Tuberculosis, HIV, Anaemia, Diarrhoea in children under five, respiratory infections due to bio mass cooking. The proponent shall also create awareness and educate the nearby community and workers for Sanitation, Personal Hygiene, Hand washing, not to defecate in open, Women Health and Hygiene (Providing Sanitary Napkins), hazard of tobacco and alcohol use. The Proponent shall carryout base line HRA for all the category of workers and thereafter every five years.
- iii. The Proponent shall carry out Occupational health surveillance which be a part of HRA and include Biological Monitoring where practical and feasible, and the tests and investigations relevant to the exposure (e.g. for Dust a X-Ray chest; For Noise Audiometric; for Lead Exposure Blood Lead, For Welders Full Ophthalmologic Assessment; for Manganese Miners a complete Neurological Assessment by a Certified Neurologist, and Manganese (Mn) Estimation in Blood; For Inorganic Chromium- Fortnightly skin inspection of hands and forearms by a responsible person. Except routine tests all tests would be carried out in a Lab accredited by NABH. Records of Health Surveillance must be kept for 30 years, including the results of and the records of Physical examination and tests. The record of exposure due to materials like Asbestos, Hard Rock Mining, Silica, Gold, Kaolin, Aluminium, Iron, Manganese, Chromium, Lead, Uranium need to be handed over to the Mining Department of the State in case the life of the mine is less than 30 years. It would be obligatory for the State Mines Departments to make arrangements for the safe and secure storage of the records including X-Ray. Only conventional X-Ray will be accepted for record purposes and not the digital one). X-Ray must meet ILO criteria (17 x14 inches and of good quality).
- iv. The Proponent shall maintained a record of performance indicators for workers which includes (a) there should not be a significant decline in their Body Mass Index and it should stay between 18.5 -24.9, (b) the Final Chest X-Ray compared with the base line X-Ray should not show any capacities ,(c) At the end of their leaving job there should be no Diminution in their Lung Functions Forced Expiratory Volume in one second (FEV1), Forced Vital Capacity (FVC), and the ratio) unless they are smokers which has to be adjusted, and the effect of age, (d) their

hearing should not be affected. As a proof an Audiogram (first and last need to be presented), (e) they should not have developed any Persistent Back Pain, Neck Pain, and the movement of their Hip, Knee and other joints should have normal range of movement, (f) they should not have suffered loss of any body part. The record of the same should be submitted to the Regional Office, MoEF&CC annually along with details of the relief and compensation paid to workers having above indications.

- v. The Project Proponent shall ensure that Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.
- vi. Project Proponent shall make provision for the housing for workers/labors or shall construct labor camps within/outside (company owned land) with necessary basic infrastructure/ facilities like fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche for kids etc. The housing may be provided in the form of temporary structures which can be removed after the completion of the project related infrastructure. The domestic waste water should be treated with STP in order to avoid contamination of underground water.
- vii. The activities proposed in Action plan prepared for addressing the issues raised during the Public Hearing shall be completed as per the budgetary provisions mentioned in the Action Plan and within the stipulated time frame. The Status Report on implementation of Action Plan shall be submitted to the concerned Regional Office of the Ministry along with District Administration.

X. Corporate Environment Responsibility (CER)

- i. The activities and budget earmarked for Corporate Environmental Responsibility (CER) as per Ministry's O.M No 22-65/2017-IA. II (M) dated 01.05.2018 or as proposed by EAC should be kept in a separate bank account. The activities proposed for CER shall be implemented in a time bound manner and annual report of implementation of the same along with documentary proof viz. photographs, purchase documents, latitude & longitude of infrastructure developed & road constructed needs to be submitted to Regional Office MoEF&CC annually along with audited statement.
- ii. Project Proponent shall keep the funds earmarked for environmental protection measures in a separate account and refrain from diverting the same for other purposes. The Year wise expenditure of such funds should be reported to the MoEF&CC and its concerned Regional Office.

XI. Miscellaneous

- i. The Project Proponent shall prepare digital map (land use & land cover) of the entire lease area once in five years purpose of monitoring land use pattern and submit a report to concerned Regional Office of the MoEF&CC.

- ii. The Project Authorities should inform to the Regional Office regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
- iii. It shall be mandatory for the project management to submit six (06) monthly compliance report in respect of the stipulated prior environmental clearance terms and conditions in hard copies and soft copies to the regulatory authority concerned Regional Office of MoEF& CC at Ranchi and Jharkhand State Pollution Control Board (J.S.P.C.B.), Ranchi / CPCB / SEIAA.
- iv. A separate 'Environmental Management Cell' with suitable qualified manpower should be set-up under the control of a Senior Executive. The Senior Executive shall directly report to Head of the Organization. Adequate number of qualified Environmental Scientists and Mining Engineers shall be appointed and submit a report to RO, MoEF&CC.
- v. The concerned Regional Office of the MoEF&CC shall randomly monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the MoEF&CC officer(s) by furnishing the requisite data / information / monitoring reports.
- vi. Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.
- vii. The Ministry / SEIAA / SEAC may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
- viii. The Ministry / SEIAA / SEAC reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
- ix. The Environmental Clearance accorded shall be valid for the period of lease of the mine. The PP shall not increase production rate and alter lease area during the validity of Environmental Clearance.
- x. Any appeal against this Environmental Clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under section 16 of the National Green Tribunal Act, 2010.

The TORs prescribed for undertaking detailed EIA study are as follows:

- i. Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.
- ii. A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.
- iii. All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.
- iv. All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/ toposheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).
- v. Information should be provided in Survey of India Toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.
- vi. Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.
- vii. It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.
- viii. Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.
- ix. The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.

- x. Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.
- xi. Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.
- xii. A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.
- xiii. Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.
- xiv. Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.
- xv. The vegetation in the RF / PF areas in the study area, with necessary details, should be given.
- xvi. A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.
- xvii. Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.
- xviii. A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and

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buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled- I fauna found in the study area, the necessary plan alongwith budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.

- xlx. Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.
- xx. Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating UTL, HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).
- xxi. R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.
- xxii. One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.
- xxiii. Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input

parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.

- xxiv. The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.
- xxv. Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.
- xxvi. Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.
- xxvii. Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.
- xxviii. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and Impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.
- xxix. Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.
- xxx. Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.
- xxxi. A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.
- xxxii. Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road

network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.

- xxxiii. Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.
- xxxiv. Conceptual post mining land use and Redamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.
- xxxv. Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.
- xxxvi. Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.
- xxxvii. Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.
- xxxviii. Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.
- xxxix. Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.
- xl. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
- xli. The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.
- xlii. A Disaster management Plan shall be prepared and included in the EIA/EMP Report.
- xliii. Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.
- xliv. Besides the above, the below mentioned general points are also to be followed :-

a) Executive Summary of the EIA/EMP Report

- b) All documents to be properly referenced with Index and continuous page numbering.
 - c) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.
 - d) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF & CC / NABL accredited laboratories. All the original analysis / testing reports should be available during appraisal of the Project.
 - e) Where the documents provided are in a language other than English, an English translation should be provided.
 - f) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.
 - g) While preparing the EIA report, the instructions for the Proponents and Instructions for the Consultants issued by MoEF& CC vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.
 - h) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF & CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.
 - i) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.
 - j) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.
- xlv. After preparing the draft EIA (as per the generic structure prescribed in Appendix- III of the EIA Notification, 2006) covering the above mentioned issues, the proponent will get the public hearing conducted and take further necessary action for obtaining environmental clearance in accordance with the procedure prescribed under the EIA Notification, 2006.
- xlvi. The Prescribed ToRs is valid as per O.M. F. No. IA3-22/10/2022-IA.III(E177258), dated 08.06.2022 of MoEF&CC, Govt. of India.

The TORs prescribed for undertaking detailed EIA study are as follows:

1. Siting of washery is critical considering to its environmental impacts. Preference should be given to the site located at pit head; in case such a site is not available, the site should be as close to the pit head as possible and coal should be transported from mine to the washery preferably through closed conveyer belt to avoid air pollution.
2. The washery shall not be located in eco-sensitive zones areas.
3. The washery should have a closed system and zero discharge. The storm drainage should be treated in settling ponds before discharging into rivers/streams/water bodies.
4. A thick Green belt of about 50 m width should be developed surrounding the washery.
5. A brief description of the plant alongwith a layout, the specific technology used and the source of coal should be provided.
6. The EIA-EMP Report should cover the impacts and management plan for the project of the capacity for which EC is sought and the impacts of specific activities, including the technology used and coal used, on the environment of the area (within 10km radius), and the environmental quality of air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts for the rated capacity. Cumulative impacts for air and water should be a part of EIA in case coal mine, TPP and other washeries are located within 10km radius. The EIA should also include mitigative measures needed to minimize adverse environmental impacts.
7. A Study Area Map of the core zone as well as the 10km area of buffer zone showing major industries/ mines and other polluting sources should be submitted. These maps shall also indicate the migratory corridors of fauna, if any and areas of endangered fauna; plants of medicinal and economic importance; any ecologically sensitive areas within the 10 km buffer zone; the shortest distance from the National Park/WL Sanctuary Tiger Reserve, etc. alongwith the comments of the Chief Wildlife Warden of the State Government.
8. Data of one-season (non-monsoon) primary- base-line data on environmental quality of air (PM10, PM2.5, SOx and NOx, noise, water (surface and groundwater), soil be submitted.
9. The wet washery should generally utilize mine water only. In case mine water is not available, the option of storage of rain water and its use should be examined. Use of surface water and ground water should be avoided.
10. Detailed water balance should be provided. The break-up of water requirement as per different activities in the mining operations vis-a-vis washery should be given. If the

source of water is from surface water and/or ground water, the same may be justified besides obtaining approval of the Competent Authority for its drawl.

11. The entire sequence of mineral production, transportation, handling, transfer and storage of mineral and waste, if any, and their impacts on air quality should be shown in a flow chart with specific points where fugitive emissions can arise and specific pollution control/mitigative measures proposed to be put in place. The washed coal and rejects should be transport by train as far as possible. Road transport of washed coal and rejects should generally be avoided. In case, the TPP is within 10km radius, it should be through conveyer belt. If transport by rail is not feasible because of the topography of the area, the option for transport by road be examined in detail and its impacts along with the mitigation measures should be clearly brought out in EIA/EMP report.
12. Details of various facilities proposed to be provided in terms of parking, rest areas, canteen etc.to the personnel involved in mineral transportation, workshop and effluents/pollution load from these activities should be provided.
13. Impacts of CHP, if any, on air and water quality should also be spell out alongwith Action Plan.
14. O.M. no. J-IIQ13/25/2014-IA.I dated 11th August, 2014 to be followed with regard to CSR activities.
15. Details of Public Hearing, Notice(s) issued in newspapers, proceedings/minutes of Public Hearing, points raised by the general public and response/commitments made by the proponent along with the Action Plan and budgetary provisions be submitted in tabular form. If the Public Hearing is in the regional language, an authenticated English translation of the same should be provided. Status of any litigations/ court cases filed/pending, if any, against the project should be mentioned in EIA.
16. Analysis of samples indicating the following be submitted:
 - a. Characteristics of coal prior to washing (this includes grade of coal, other characteristics of ash, Sand heavy levels of metals such as Hg, As, Pb, Cr etc).
 - b. Characteristics and quantum of coal after washing.
 - c. Characteristics and quantum of coal rejects.
17. Details of management/disposal/use of coal rejects should be provided. The rejects should be used in TPP located close to the washery as far as possible. If TPP is within a reasonable distance (10 km), transportation should be by conveyor belt. If it is far away, the transportation should be by rail as far as possible.
18. Copies of MOU/Agreement with linkages (for stand-alone washery) for the capacity for which EC is being sought should be submitted.
19. Corporate Environment Responsibility:
 - a. The Company must have a well laid down Environment Policy approved by the Board of Directors.

- b. The Environment Policy must prescribe for standard operating process/ procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/ conditions.
 - c. The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions must be furnished.
 - d. To have proper checks and balances, the company should have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.
20. A detailed action Plan for Corporate Social Responsibility for the project affected people and people living in and around the project area should be provided.
21. Permission of drawl of water shall be pre-requisite for consideration of EC.
22. Wastewater /effluent should conform to the effluent standards as prescribed under Environment (Protection) Act, 1986.
23. Details of washed coal, middling and rejects along with the MoU with the end-users should be submitted.
24. The Prescribed ToRs is valid as per O.M. F. No. IA3-22/10/2022-IA.III[E177258], dated 08.06.2022 of MoEF&CC, Govt. of India.

I. Statutory compliance

- i. The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1980, in case of the diversion of forest land for non-forest purpose involved in the project.
- ii. The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.
- iii. The project proponent shall prepare a Site-Specific Conservation Plan / Wildlife Management Plan and approved by the Chief Wildlife Warden. The recommendations of the approved Site-Specific Conservation Plan / Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report. (in case of the presence of schedule-I species in the study area)
- iv. In the writ petition (Civil) no. 202/1995, T.N. Godaverman Thirumulpad vs Union of India and ors. the Hon'ble Supreme Court passed an order dated 03.06.2022 " National Park or Wildlife Sanctuary must have an ESZ of minimum 01 km in which the activities prescribed and prescribed in the guidelines of 09th February, 2011 shall be strictly adhered to ".
- v. The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State pollution Control Board/ Committee.
- vi. The project proponent shall obtain the necessary permission from the Central Ground Water Authority.
- vii. Solid waste/hazardous waste generated in the mines needs to addressed in accordance to the Solid Waste Management Rules, 2016 / Hazardous & Other Waste Management Rules, 2016 as amended from time to time.

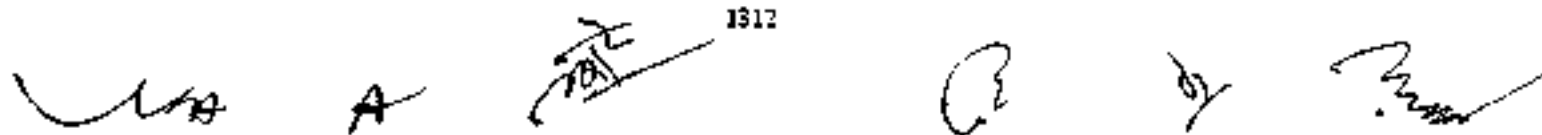
II. Air quality monitoring and preservation

- i. Continuous ambient air quality monitoring stations as prescribed in the statute be established in the core zone as well as in the buffer zone for monitoring of pollutants, namely PM10, PM2.5, SO2 and NOx. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board. Online ambient air quality monitoring stations may also be installed in addition to the regular monitoring stations as per the requirement and/or

In consultation with the SPCB. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, etc to be carried out at least once in six months.

- ii. The Ambient Air Quality monitoring In the core zone shall be carried out to ensure the Coal Industry Standards notified vide GSR 742 (E) dated 25.9.2000 and as amended from time to time by the Central Pollution Control Board. Data on ambient air quality and heavy metals such as Hg, As, Ni, Cd, Cr and other monitoring data shall be regularly reported to the Ministry/Regional Office and to the CPCB/SPCB.
- iii. Transportation of coal, to the extent permitted by road, shall be carried out by covered trucks/conveyors. Effective control measures such as regular water / mist sprinkling / rain gun etc shall be carried out in critical areas prone to air pollution (with higher values of PM10/PM2.5) such as haul road, loading/ unloading and transfer points. Fugitive dust emissions from all sources shall be controlled regularly. It shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central/State Pollution Control Board.
- iv. The transportation of coal shall be carried out as per the provisions and route envisaged in the approved Mining Plan or environment monitoring plan. Transportation of the coal through the existing road passing through any village shall be avoided. In case, It is proposed to construct a 'bypass' road, It should be so constructed so that the impact of sound, dust and accidents could be appropriately mitigated.
- v. Vehicular emissions shall be kept under control and regularly monitored. All the vehicles engaged in mining and allied activities shall operate only after obtaining 'PUC' certificate from the authorized pollution testing centres.
- vi. Coal stock pile/crusher/feeder and breaker material transfer points shall invariably be provided with dust suppression system. Belt-conveyors shall be fully covered to avoid air borne dust. Side cladding all along the conveyor gantry should be made to avoid air borne dust. Drills shall be wet operated or fitted with dust extractors.
- vii. Coal handling plant shall be operated with effective control measures w.r.t. various environmental parameters. Environmental friendly sustainable technology should be implemented for mitigating such parameters.
- iii. **Water quality monitoring and preservation**
 - i. The effluent discharge (mine waste water, workshop effluent) shall be monitored in terms of the parameters notified under the Water Act, 1974 Coal Industry Standards vide GSR 742 (E) dated 25.9.2000 and as amended from time to time by the Central Pollution Control Board.

- ii. The monitoring data shall be uploaded on the company's website and displayed at the project site at a suitable location. The circular No. J-20012/1/2006-1A.II (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change shall also be referred in this regard for its compliance.
- iii. Regular monitoring of ground water level and quality shall be carried out in and around the mine lease area by establishing a network of existing wells and constructing new piezometers during the mining operations. The monitoring of ground water levels shall be carried out four times a year i.e. pre-monsoon, monsoon, post-monsoon and winter. The ground water quality shall be monitored once a year, and the data thus collected shall be sent regularly to MOEFCC/RO.
- iv. Monitoring of water quality upstream and downstream of water bodies shall be carried out once in six months and record of monitoring data shall be maintained and submitted to the Ministry of Environment, Forest and Climate Change / Regional Office.
- v. Ground water, excluding mine water, shall not be used for mining operations. Rainwater harvesting shall be implemented for conservation and augmentation of ground water resources.
- vi. Catch and or garland drains and siltation ponds in adequate numbers and appropriate size shall be constructed around the mine working, coal heaps & OB dumps to prevent run off of water and flow of sediments directly into the river and water bodies. Further, dump material shall be properly consolidated/ compacted and accumulation of water over dumps shall be avoided by providing adequate channels for flow of silt into the drains. The drains/ ponds so constructed shall be regularly de-silted particularly before onset of monsoon and maintained properly. Sump capacity should provide adequate retention period to allow proper settling of silt material. The water so collected in the sump shall be utilised for dust suppression and green belt development and other industrial use. Dimension of the retaining wall constructed, if any, at the toe of the OB dumps within the mine to check run-off and siltation should be based on the rainfall data. The plantation of native species to be made between toe of the dump and adjacent field/habitation/water bodies.
- vii. Adequate groundwater recharge measures shall be taken up for augmentation of ground water. The project authorities shall meet water requirement of nearby village(s) after due treatment conforming to the specific requirement (standards).
- viii. Industrial waste water generated from CHP, workshop and other waste water, shall be properly collected and treated so as to conform to the standards prescribed under the standards prescribed under Water Act 1974 and Environment (Protection) Act, 1986 and the Rules made there under, and as amended from time to time. Adequate ETP / STP needs to be provided.
- ix. The water pumped out from the mine, after siltation, shall be utilized for industrial purpose viz. watering the mine area, roads, green belt development etc. The drains shall be regularly desilted particularly after monsoon and maintained properly.
- x. The surface drainage plan including surface water conservation plan for the area of influence affected by the said mining operations, considering the presence of river/rivulet/pond/lake etc, shall be prepared and implemented by the project proponent. The surface drainage plan and/or any diversion of natural water

The bottom of the page features several handwritten signatures and initials in black ink. From left to right, there is a large, stylized signature, a smaller 'A' or 'M' initial, a signature with '10/12' written above it, a circular stamp or signature, a signature starting with 'S', and a final signature on the far right.

courses shall be as per the approved Mining Plan/EIA/EMP report and with due approval of the concerned State/Govt Authority. The construction of embankment to prevent any danger against inrush of surface water into the mine should be as per the approved Mining Plan and as per the permission of DGMS or any other authority as prescribed by the law.

- xi. The project proponent shall take all precautionary measures to ensure reversion/ riparian ecosystem in and around the coal mine upto a distance of 5 km. A reversion /riparian ecosystem conservation and management plan should be prepared and implemented in consultation with the irrigation / water resource department in the state government.

IV. Noise and Vibration monitoring and prevention

- i. Adequate measures shall be taken for control of noise levels as per Noise Pollution Rules, 2016 in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with personal protective equipments (PPE) like ear plugs / muffs in conformity with the prescribed norms and guidelines in this regard. Adequate awareness programme for users to be conducted. Progress in usage of such accessories to be monitored.
- ii. Controlled blasting techniques shall be practiced in order to mitigate ground vibrations, fly rocks, noise and air blast etc., as per the guidelines prescribed by the DGMS.
- iii. The noise level survey shall be carried out as per the prescribed guidelines to assess noise exposure of the workmen at vulnerable points in the mine premises, and report in this regard shall be submitted to the Ministry/RO on six-monthly basis.

V. Mining Plan

- i. Mining shall be carried out under strict adherence to provisions of the Mines Act 1952 and subordinate legislations made there-under as applicable.
- ii. Mining shall be carried out as per the approved mining plan(including Mine Closure Plan) abiding by mining laws related to coal mining and the relevant circulars issued by Directorate General Mines Safety (DGMS).
- iii. No mining shall be carried out in forest land without obtaining Forestry Clearance as per Forest (Conservation) Act, 1980
- iv. Efforts should be made to reduce energy and fuel consumption by conservation, efficiency improvements and use of renewable energy.

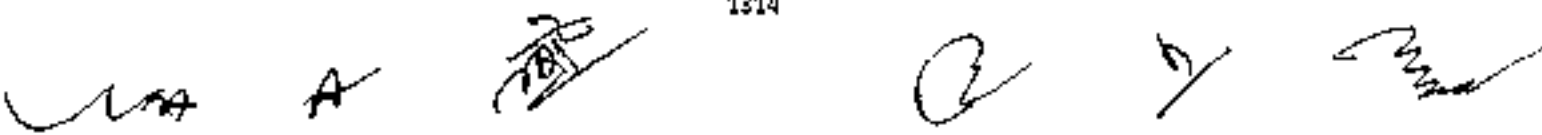
VI. Land reclamation

- i. Digital Survey of entire lease hold area/core zone using Satellite Remote Sensing survey shall be carried out at least once in three years for monitoring land use pattern and report in 1:50,000 scale or as notified by Ministry of Environment, Forest and Climate Change (MOEF&CC) from time to time shall be submitted to MOEF&CC/Regional Office (RO).

- ii. The final mine void depth should preferably be as per the approved Mine Closure Plan, and in case it exceeds 40 m, adequate engineering interventions shall be provided for sustenance of aquatic life therein. The remaining area shall be backfilled and covered with thick and alive top soil. Post-mining land be rendered usable for agricultural /forestry purposes and shall be diverted. Further action will be treated as specified in the guidelines for Preparation of Mine Closure Plan Issued by the Ministry of Coal dated 27th August, 2009 and subsequent amendments.
- iii. The entire excavated area, backfilling, external OB dumping (including top soil) and afforestation plan shall be in conformity with the "during mining" / "post mining" land-use pattern, which is an integral part of the approved Mining Plan and the EIA/EMP submitted to this Ministry. Progressive compliance status vis-a-vis the post mining land use pattern shall be submitted to the MOEFCC/RO.
- iv. Fly ash shall be used for external dump of overburden, backfilling or stowing of mine as per provisions contained in clause (i) and (ii) of subparagraph (3) of fly ash notification issued vide SO 2804 (E) dated 3rd November, 2009 as amended from time to time. Efforts shall be made to utilize gypsum generated from Flue Gas Desulfurization (FGD), if any, along with fly ash for external dump of overburden, backfilling of mines. Compliance report shall be submitted to Regional Office of MoEF&CC, CPCB and SPCB.
- v. Further, it may be ensured that as per the time schedule specified in mine closure plan it should remain live till the point of utilization. The topsoil shall temporarily be stored at earmarked site(s) only and shall not be kept unutilized. The top soil shall be used for land reclamation and plantation purposes. Active OB dumps shall be stabilised with native grass species to prevent erosion and surface run off. The other overburden dumps shall be vegetated with native flora species. The excavated area shall be backfilled and afforested in line with the approved Mine Closure Plan. Monitoring and management of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment, Forest and Climate Change/ Regional Office.
- vi. The project proponent shall make necessary alternative arrangements, if grazing land is involved in core zone, in consultation with the State government to provide alternate areas for livestock grazing, if any. In this context, the project proponent shall implement the directions of Hon'ble Supreme Court with regard to acquiring grazing land.

VII. Green Belt

- i. The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered/endemic flora/fauna, if any, spotted/reported in the study area. The Action plan in this regard, if any, shall be prepared and implemented in consultation with the State Forest and Wildlife Department.
- ii. Greenbelt consisting of 3-tier plantation of width not less than 7.5 m shall be developed all along the mine lease area as soon as possible. The green belt



comprising a mix of native species (endemic species should be given priority) shall be developed all along the major approach/ coal transportation roads.

VIII. Public hearing and Human health issues

- i. Adequate illumination shall be ensured in all mine locations (as per DGMS standards) and monitored weekly. The report on the same shall be submitted to this ministry & it's RO on six-monthly basis.
- ii. The project proponent shall undertake occupational health survey for initial and periodical medical examination of the personnel engaged in the project and maintain records accordingly as per the provisions of the Mines Rules, 1955 and DGMS circulars. Besides regular periodic health check-up, 20% of the personnel identified from workforce engaged in active mining operations shall be subjected to health check-up for occupational diseases and hearing impairment, if any, as amended time to time.
- iii. Personnel (including outsourced employees) working in core zone shall wear protective respiratory devices and shall also be provided with adequate training and information on safety and health aspects.
- iv. Implementation of the action plan on the issues raised during the public hearing shall be ensured. The project proponent shall undertake all the tasks/measures as per the action plan submitted with budgetary provisions during the public hearing. Land oustees shall be compensated as per the norms laid down in the R&R policy of the company/State Government/Central Government, as applicable.
- v. The project proponent shall follow the mitigation measures provided in this Ministry's OM No.Z-11013/5712014-IA.II (M) dated 29th October, 2014, titled 'Impact of mining activities on habitations-issues related to the mining projects wherein habitations and villages are the part of mine lease areas or habitations and villages are surrounded by the mine lease area'.

IX. Corporate Environment Responsibility

- i. The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No. 22-65/2017-IA.III dated 1st May 2018, as applicable, regarding Corporate Environment Responsibility.
- ii. The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements / deviation / violation of the environmental / forest / wildlife norms / conditions. The company shall have defined system of reporting Infringements / deviation / violation of the environmental / forest / wildlife norms / conditions and/or shareholders/stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.
- iii. A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.

iv. Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.

v. Self-environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.

X. Miscellaneous

- i. The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.
- ii. The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
- iii. The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.
- iv. The project proponent shall monitor the criteria pollutants level namely; PM_{10} , SO_2 , NO_x (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.
- v. The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
- vi. The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.
- vii. The project authorities shall inform to the Regional Office of the MOEFCC regarding commencement of mining operations.

- viii. The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
- ix. The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.
- x. No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).
- xi. Concealing factual data or submission of false / fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.
- xii. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
- xiii. The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
- xiv. The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information / monitoring reports.
- xv. The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Trans boundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.
- xvi. Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.
- xvii. The Prescribed EC is valid as per Notification no. S.O. 1807(E) dated 12.04.2022 of MoEF&CC, Govt. of India