



राज्य स्तरीय पर्यावरण समाघात निर्धारण प्राधिकरण, झारखण्ड

State Level Environment Impact Assessment Authority, Jharkhand

पौधशाला परिसर, धुर्वा, बस स्टैण्ड, के समीप, पो0+थाना-धुर्वा, राँची झारखण्ड 834004

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सत्यमेव जयते

पत्रांक:- 05

दिनांक:- 02.04.2023

प्रेषक:

सदस्य सचिव,
राज्य स्तरीय पर्यावरण समाघात निर्धारण
प्राधिकरण (SEIAA), झारखण्ड।

सेवा में,

उपायुक्त,
जिला : सरायकेला-खरसावां।

विषय : सरायकेला-खरसावां जिला का बालू खनिज से संबंधित DSR के अनुमोदन के संबंध में।

प्रसंग : आपका कार्यालय का पत्रांक-167 / खनन, दि0-13.03.2023।

महाशय,

उपर्युक्त विषयक आपके कार्यालय के प्रासंगिक पत्र दिनांक 13.03.2023 द्वारा सरायकेला-खरसावां जिला का बालू खनिज से संबंधित DSR की एक प्रति अनुमोदन हेतु दिनांक 15.03.2023 को SEIAA कार्यालय में समर्पित किया गया।

तदनुसार SEAC, झारखण्ड की 102वीं बैठक दिनांक 21.03.2023 से दिनांक 25.03.2023 में Shri Nishant Abhishek, DMO, Saraikela-Kharsawan and Shri Vipin Shushant Gudiya, Assistant Director, Geology, Saraikela की उपस्थिति में M/s Atmos Sustainable Solution Pvt. Ltd., Noida, U.P. consultant द्वारा दिनांक 21.03.2023 में SEAC के समक्ष Presentation दिया गया जिसमें DSR के Salient Features निम्नवत् बताये गये :-

1. The final DSR submitted is duly signed by all members of the Sub Divisional Committee and the Consultant. All the pages of the DSR are signed by the authorized officer of the Sub Divisional Committee.
2. The final DSR consists of the complete potential area and is demarcated as Potential Resource Area (PRA) / Sand Leases / Ghats as per Enforcement and Monitoring Guidelines for Sand Mining (EMGSM), 2020.
3. The replenishment study of pre & post monsoon period is included in final DSR.
4. The final DSR has been placed in the public domain for 01 (One) month from the 19.01.2023. As per the Sub Divisional Committee no comments / observations were obtained.
5. Demand and supply of the river bed material has been provided. The future demand for next 05 years is included in the final DSR.
6. The PRA / Sand Leases / Ghats have not been proposed on the confluence / meanders / concavities / active channels of the river.

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7. Khata & Khasra numbers of the lease area certified by the concerned Circle Officer (CO) are incorporated in the final DSR.
8. The distance of PRA / Sand Leases / Ghats from the Forest / Wildlife Protected area / Birds Sanctuary/ Wildlife Sanctuary / National Park / Eco Sensitive Zone has been verified and certified by the concerned DFOs of the respective Territorial and Wildlife division.
9. A report detailing the presence of aquatic animal in the river in proximity of the proposed PRA / Sand Leases / Ghats is included in the final DSR.
10. The proposed PRA / Sand Leases / Ghats meet the siting criteria of State Pollution Control Board / SEIAA.
11. High resolution color satellite images of the proposed potential sand mining areas are included in final DSR.
12. Bulk density and specific gravity of sand sample data has been provided by NABL accredited laboratory.
13. Cluster and contiguous cluster formation as per EMGSM guidelines, 2020 has been included in the Annexures.
14. Mining is restricted to 3/4th of the river width and 60% of the mineable reserve.
15. Transportation routes for movement of sand are provided in the final DSR.
16. All the annexures as per EMGSM guidelines, 2020 are included in the final DSR.
17. An undertaking with reference to Point no. 9.3 of the EMGSM guidelines, 2020 regarding monitoring of mining near inter-district or inter-state boundary has been provided.
18. The representative of the Sub Divisional Committee along with the Consultants have affirmed that all the guidelines of EMGSM guidelines, 2020 / Hon'ble Apex Court in Civil Appeal no. 3661-3662/2020, Pawan Kumar vs State of Bihar & ors, Hon'ble NGT in O.A. no. 54/2022/EZ, Bhumi Adhigrahan Visthapan Avam Punarvas Kisan Samiti vs State of Jharkhand & ors have been followed in preparation of the final DSR.

SEAC द्वारा उपरोक्त तथ्यों के आलोक में सर्वसम्मति से आपके द्वारा समर्पित DSR को अनुमोदन हेतु SEIAA को अपनी अनुशंसा भेजी गयी।

SEAC की DSR Saraikela-Kharsawan को अनुमोदन हेतु भेजी गयी अनुशंसा के आलोक में SEIAA, झारखण्ड की 103वीं बैठक दिनांक 01.04.2023 एवं दिनांक 02.04.2023 में विचार किया गया।

विचारोपरांत SEAC द्वारा की गयी अनुशंसा के आलोक में SEIAA द्वारा सर्वसम्मति से सरायकेला-खरसावां जिला का बालू खनिज से संबंधित DSR का अनुमोदन किया गया।

सरायकेला-खरसावां जिला का बालू खनिज से संबंधित अनुमोदित DSR की एक मूल प्रति अत्र- सह-संलग्न कर आपको अग्रेतर कार्रवाई हेतु भेजी जा रही है।

अनु० यथोक्त।

विश्वासभाजन,

सदस्य सचिव,

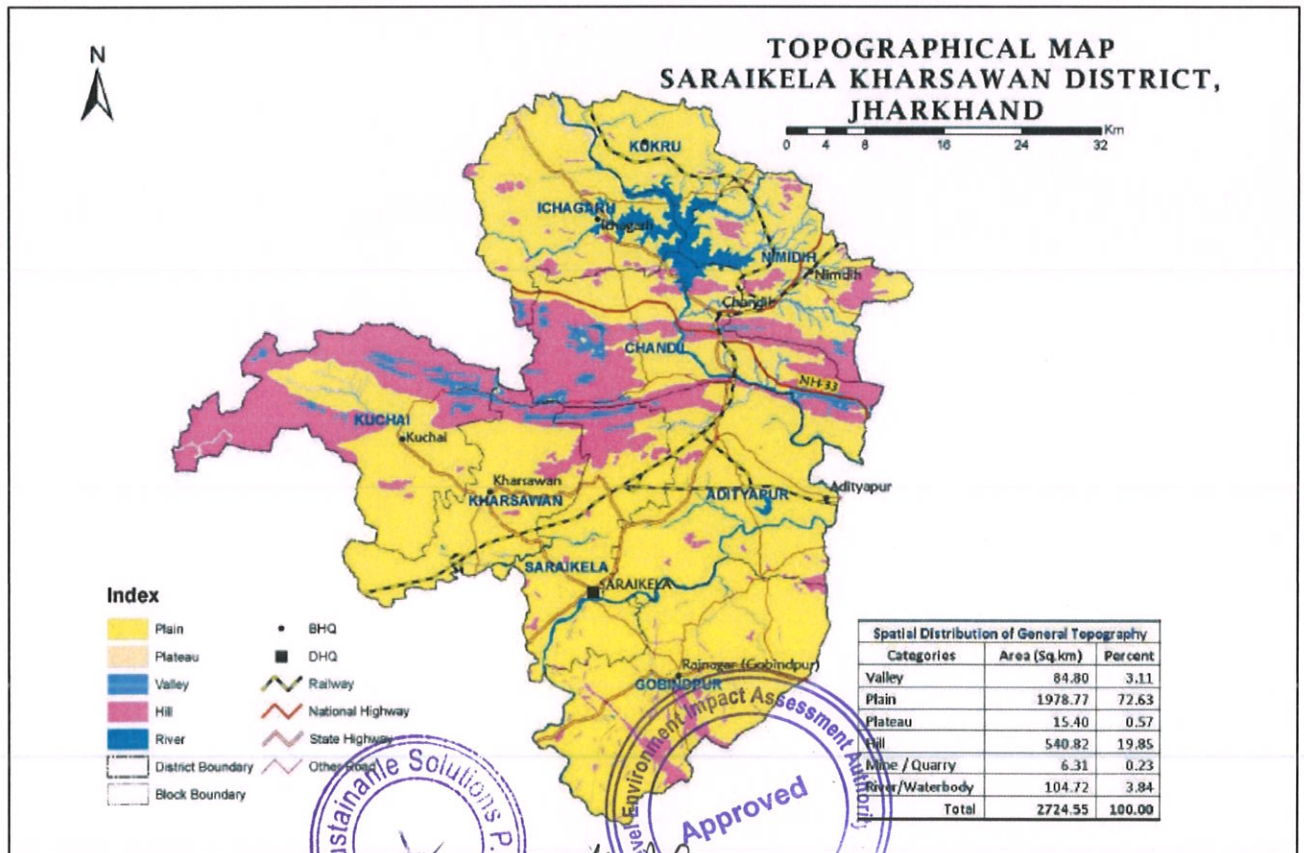
राज्य स्तरीय पर्यावरण समाघात निर्धारण
प्राधिकरण (SEIAA), झारखण्ड।

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DISTRICT SURVEY REPORT OF RIVER BED SAND MINING WITH POTENTIAL AREA FOR SARAIKELA KHARSAWAN DISTRICT, JHARKHAND

As per Notification No. S.O.141 (E) New Delhi Dated 15th of January 2016, S.O.3611 (E) New Delhi Dated 25th of July 2018, Sustainable Sand Mining Guidelines, 2016 and Enforcement & Monitoring Guidelines for Sand Mining (EMGSM) January 2020, Issued by Ministry of Environment, Forest and Climate Change (MoEF & CC)



PREPARED BY
ATMOS SUSTAINABLE SOLUTION PVT. LTD.
A-73, 3rd Floor, Sector-65, Noida, Uttar Pradesh-201301
QCI NABET Accreditation No.-NABET/EIA/2023/IA0063


CERTIFICATE

The District Survey Report (DSR), Seraikela-Kharsawan for sand mineral has been prepared in accordance with guideline issued by the Ministry of Environment, Forest & Climate Change (MoEF&CC), Government of India vide the notification S.O. 141(E) Dated 15th January, 2016 and the amended notification S.O. 3611(E) Dated 25th July, 2018.

This DSR for sand mineral which is a compendium of available mineral resources, geographical set up, environmental and ecological condition of the district and is based on survey made on the seriate sources of the different tehsils of the District and data various departments like Geology & Mining, Forests, Irrigation, Agriculture, Horticulture, Health Departments; published reports & websites. The DSR report of sand has been web hosted for one month in the District to invite any comments from the public.

It will no doubt, form the basis for application for environmental clearance, preparation of reports and appraisal of projects. The SEIAA and SEAC will scrutinize the applications and recommenced for environmental clearance of mining of minor minerals(sand) on the basis of this District Survey Report. As per guideline the Report will be updated once in every five years.

Reviewed By:


11/3/21

Deputy Commissioner

Seraikela-Kharsawan

Date:

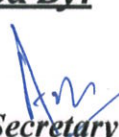

07/04/2023

Member

State Level Environment Impact
Assessment Authority, Jharkhand



Approved By:


02/04/2023

Member Secretary








State Level Environment Impact
Assessment Authority, Ranchi,
Jharkhand

State Level Environment
Impact Assessment Authority
Jharkhand


Chairman

State Level Environment Impact
Assessment Authority, Jharkhand

SUB-DIVISIONAL COMMITTEE COMPRISING
UNDER THE GUIDELINE OF MOEF & CC, NEW DELHI, 25TH JULY 2018

Minor Irrigation Department Saraikela-Kharsawan	
State Pollution Control Board or Member Saraikela-Kharsawan	
Assistant Director, Geology Saraikela-Kharsawan	
District Mining Officer Saraikela-Kharsawan	
Divisional Forest Officer Saraikela-Kharsawan	
Sub-Divisional Magistrate Saraikela-Kharsawan	
Deputy Commissioner Saraikela-Kharsawan	



PREFACE

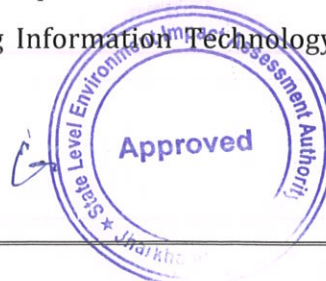
The purpose and structure of District Survey Report has been discretely discussed under Para 7(iii) (a) and Annexure (x) of the notification issued by Ministry of Environment, Forest and Climate Change, Government of India on 15th January 2016 to which the Central Government makes the amendments by Notification dated 25 July 2018. The District Survey Report (DSR) is to be prepared in every district for each minor mineral. It will guide systematic and scientific utilization of natural resources, so that present and future generation may be benefitted at large. The purpose of District Survey Report (DSR) is identification of areas of aggradations or deposition where mining can be allowed; and identification of areas of erosion and proximity to infrastructural structures and installations where mining should be prohibited.

Atmos Sustainable Solutions Pvt Ltd. has prepared the District Survey Report (DSR) comprising of secondary data published and endorsed by various departments and websites about geology of the area, mineral wealth details, details of lease and mining activity in the district and revenue of mineral along with the primary data collected from ground survey. This report also contains details of climatic conditions, topography and terrain, land form, forest, rivers, soil, agriculture, road, transportation, irrigation etc. The DSR would also help to calculate the Annual Rate of Replenishment Wherever Applicable and Allow Time for Replenishment.

Further, In Pursuance to The Order of Hon'ble Supreme Court Dated The 27th February, 2012 In I.A. No.12- 13 Of 2011 In Special Leave Petition (C) No.19628-19629 Of 2009, In The Matter Of Deepak Kumar Etc. Vs. State Of Haryana And Others Etc., Prior Environmental Clearance Has Now Become Mandatory For Mining Of Minor Minerals Irrespective Of The Area Of Mining Lease; And Also In View Of The Hon'ble National Green Tribunal, Order Dated The 13th January, 2015 In The Matter Regarding Sand Mining Has Directed For Making A Policy On Environmental Clearance For Mining Leases In Cluster For Minor Minerals, The Ministry Of Environment, Forest And Climate Change In Consultation With State Governments Has Prepared Guidelines On Sustainable Sand Mining Detailing The Provisions On Environmental Clearance For Cluster, Creation Of District Environment Impact Assessment Authority And Proper Monitoring Of Minor Mineral Mining Using Information Technology And Information



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Technology Enabled Services To Track The Mined Out Material From Source To Destination.



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OBJECTIVES

The Main objective of the preparation of District Survey Report (as per the Sustainable Sand Mining Guideline) is to ensure the following: -

1. Identification of areas of aggradations or deposition where mining can be allowed
2. Identification of areas of erosion and proximity to infrastructural structures and installations where mining should be prohibited and calculation of annual rate of replenishment and allowing time for replenishment after mining in that area.
3. Identification of mineral wealth in the district.



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6	Route Map of Sand Ghat
7	Copy of Zoological Survey of India (ZSI) Letter
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16	Test Report of sand from NABL Accredited agency
17	Copy of Work Order
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DISTRICT SURVEY REPORT OF SERAIKELA-KHARSAWAN DISTRICT
FOR
SAND MINING OR RIVER BED MINING

PREPARED UNDER:

- Appendix -X of MoEF&CC, GoI Notification S.O. 141(E) dated 15.1.2016
- Sustainable Sand Mining Guidelines
- MoEF&CC, GoI Notification S.O. 3611(E) dated 25.07.2018
- Sand Mining Framework -2018
- Enforcement & Monitoring Guidelines for Sand Mining by MoEF&CC-2020
- Jharkhand Minor Mineral Concession (Amendment) Rules 2020. The notification stated about the prevention of Illegal mining, transportation and storage of sand and guidelines for mining activity, safety barriers, mining depth and lease.



DISTRICT SURVEY REPORT FOR RIVER BED SAND MINING

As per the Gazette Notification dated 15th January, 2016 of Ministry of Environment, Forest and Climate Change a joint survey has been carried out by the District Environment Impact Assessment Authority (DEIAA) with the assistance of Irrigation Department, Drainage Department, Forest Department, Mining Department and Revenue Department in the district for preparation of the District Survey Report.

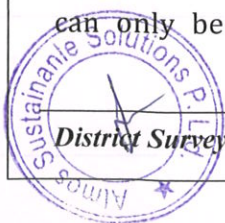
The Ministry of Environment Forest & Climate Change formulated the Sustainable Sand Management Guidelines 2016 which focuses on the Management of Sand Mining in the Country. But in the recent past, it has been observed that apart from management and systematic mining practices there is an urgent need to have a guideline for effective enforcement of regulatory provision and their monitoring.

Section 23 C of MMDR, Act 1957 empowered the State Government to make rules for preventing illegal mining, transportation and storage of minerals. But in the recent past, it has been observed that there was large number of illegal mining cases in the Country and in some cases, many of the officers lost their lives while executing their duties for curbing illegal mining incidence. The illegal and uncontrolled illegal mining leads to loss of revenue to the State and degradation of the environment.

India is developing at a faster pace and much technological advancement has already been taken place in the surveillance and remote monitoring in the field of mining. Thus, it is prudent to utilize the technological advancement for the effective monitoring of the mining activities particularly sand mining in the country.

Use of latest remote surveillance and IT services helps in effective monitoring of the sand mining activity in-country and also assist the government in controlling the illegal mining activity in the country. Thus, there is a need for an effective policy for monitoring of sand mining in the Country which can be enforced on the ground. These guidelines focus on the effective monitoring of the sand mining since from the identification of sand mineral sources to its dispatch and end-use by consumers and the general public. Further, the effective monitoring and enforcement require efforts from not only Government agencies but also by consumers and the general public.

It is the responsibility of every citizen of India to protect the environment and effective monitoring can only be possible when all the stakeholders' viz. Central Government, State Government,



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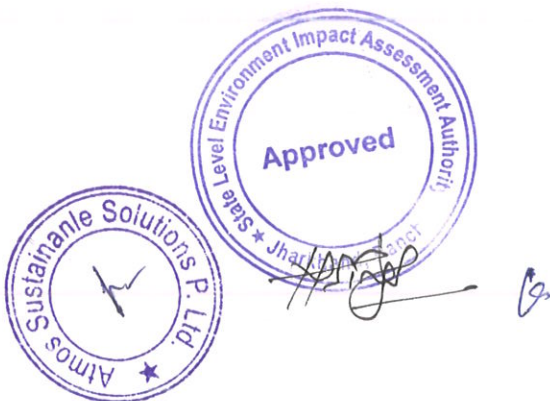


Leaseholders/Mine Owners, Distributors, Dealers, Transporters and Consumers (bulk & retail) will contribute towards sustainable mining, and comply with all the statutory provisions. It is felt necessary to identify the minimum requirements across all geographical regions to have a uniform protocol for monitoring and enforcement of regulatory provision prescribed for sustainable sand and gravel mining.

This document will serve as a guideline for collection of critical information for enforcement of the regulatory provision(s) and also highlights the essential infrastructural requirements necessary for effective monitoring for Sustainable Sand Mining.

The document is prepared in consideration of various orders/directions issued by Hon'ble NGT in matters pertaining to illegal sand mining and also based on the reports submitted by expert committees and investigation teams.

Further, this document is supplemental to the existing "Sustainable Sand Mining Management Guideline-2016" (SSMG-2016), and these two guidelines viz. "Enforcement & Monitoring Guidelines for Sand Mining" (EMGSM-2020) and SSMG-2016 shall be read and implemented in sync with each other. In case, any ambiguity or variation between the provisions of both these document arises, the provision made in "Enforcement & Monitoring Guidelines for Sand Mining-2020" shall prevail.



CHAPTER -01 INTRODUCTION

1.1 Location and Geographical Area:

Saraikela-Kharsawan district, formerly the Princely States of Saraikela and Kharsawa is one of the twenty-four districts of Jharkhand state in eastern India. Saraikela town is the district headquarters of Saraikela Kharsawan district. Saraikela is situated on the bank of Kharkai River in southern Jharkhand. It is well connected with Jamshedpur via land route.

In the year 1620, Kumar Bikram Singh I, the third Maharaja Jagannath Singh, established the Saraikela state, which was merged with Bihar state after independence and ranked as subdivision merged with the boundaries of Kharsawan state. Later on the basis of territories act in 1950, 39 villages of Chandil, Nimdih and Tamar area were included into it.

In the year 2001 Saraikela Kharsawan was carved out from West Singhbhum district of Jharkhand.

The district is situated between Longitude, East Between 85°30'14" & 86°15'24" and Latitude, North Between 22°29'26" & 23°09'34". The district shares border with East Singhbhum District to the East, West Singhbhum District to the South, Purulia District to the North. It shares Border with West Bengal State to the East. Saraikela Kharsawan district comprises of two subdivisions namely Saraikela and Chandil and nine blocks/circles namely Saraikela, Kharsawan, Gamharia, Rajnagar, Kuchai, Chandil, Ichagarh, Nimdih, Kukru. It occupies an area of approximately 2724.55 square kilometres. It's in the 209 meters to 178 meters elevation range.

Surrounded by lush green forests, hillocks, serpent like rivers and rivulets, Saraikela Town is situated on the bank of Kharkai River. The district has not only a rich cultural heritage but also has large deposits of minerals like Kyanite, Asbestos, quartz etc. and other valuable minerals.

Several rivers flow across Saraikela Kharsawan district. Among these Subarnarekha, Kharkai, Korkori are the important ones. Chandil dam is one of the popular and famous waterbodies of the district. It is located near the Chandil town.

1.2 Administrative Setup:

The administrative point of view this district has been divided into 2 Sub-Division

- Saraikela
- Chandil

The district comprises of 09 blocks, 132 Gram Panchayat and 1148 villages. It has 09 developed blocks namely;

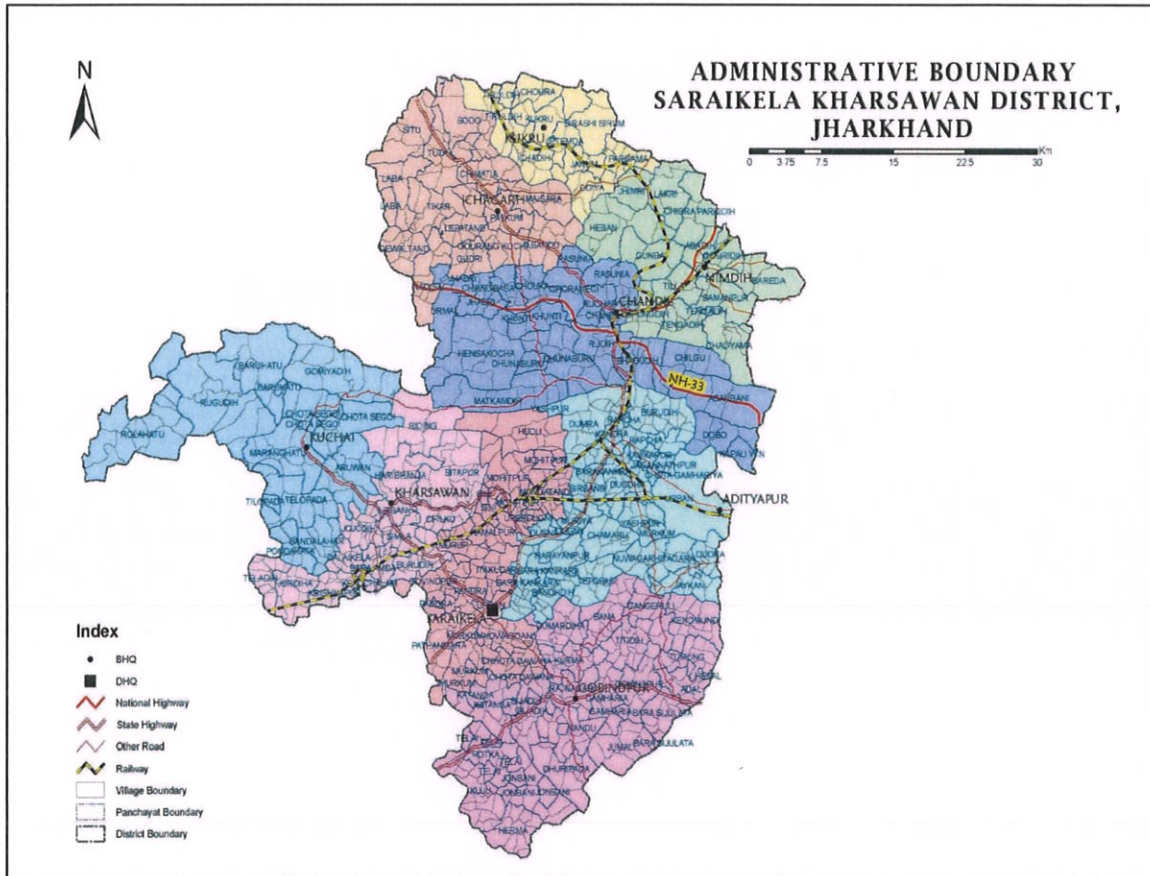
- Saraikela,
- Kharsawan,



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- Gobindpur (Rajnagar),
- Kuchai,
- Ichagarh,
- Nimdih,
- Chandil,
- Gobi(Rajnagar),
- Kukru.



Source: Jharkhand Space Application Centre

Administrative boundary of Saraikela-Kharsawan district

Demographics:

According to the 2011 census Saraikela Kharsawan district has a population of 1,065,056 roughly equal to the nation of Cyprus or the US state of Rhode Island. This gives it a ranking of 428th in India (out of a total of 640). The district has a population density of 390 inhabitants per square kilometer. Its population growth rate over the decade 2001-2011 was 25.28%. Saraikela Kharsawan has a sex ratio of 958 females for every 1000 males, and a literacy rate of 68.85%. Scheduled Castes and Scheduled Tribes make up 5.3% and 35.2% of the population respectively. According to the census,



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66.57% of the district practiced Hinduism and 5.97% Islam. Other religions made up 26.33% of the population.

At the time of the 2011 Census of India, 44.01% of the population in the district spoke Bengali as their first Language, 15.62% Santali, 9.65% Ho, 9.48% Odia, 6.98% Hindi, 4.76% Mundari, 2.83% Urdu, 2.7% Bhojpuri and 1.05% Maithili.

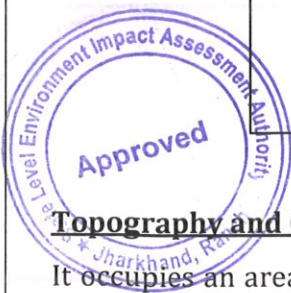
It is the 14th largest district in the state by Population. But 14th Largest District in the state By Area. 424th Largest District in the Country by Population. 7th highest District in the State By literacy rate. 418th highest District in the Country By literacy rate. Its literacy Rate is 68.85.



Location Index Map

Topography and Climate:

It occupies an area of approximately 2724.55 Sq.Km. It's in the 209 meters to 178 meters elevation range. Surrounded by lush green forests, hillocks, serpent like rivers and rivulets, Seraikela Town is



situated on the bank of Kharkai River. The district has not only a rich cultural heritage but also has large deposits of minerals like Cyanide, Asbestos, quartz etc. and other valuable minerals.

The district falls in the rain shadow of the Santhal Pargana plateau. The average annual precipitation is 1307.6 mm and the average number of rainy days is 59. Even this meager precipitation is erratic which coupled with long inter spell forces the district to suffer from drought.

The predominant physical feature over major part of the district is the rolling topography dotted with isolated inselbergs except in the Borijore and Sundarpahari blocks. A substantial part of Borijore and Sundarpahari block is under forest cover. The altitude of the land surface increases from west to the east. The major hills are confined to the eastern part of the district comprising the Gandeshwari Pahar (238.41m) and Kesgari Pahar (268.29m) while in the western part of the district isolated hills are in the form of the inselbergs and other small hillocks.

The soil is mostly acidic, reddish yellow; light textured and highly permeable with poor water holding capacity. The southern part of the district is underlain by Granite-gneiss of Achaean age forming the basement. These occur as large batholiths and are intruded by basic rocks.

The Saraikela-Kharsawan district is characterized by a terrain with distinct geomorphological set-up. A prominent east-west trending hill range virtually cuts across the district dividing the district into two halves; the northern part and the southern part. In the northern part, another smaller hill range runs parallel to the main range north of Chandil town. Similarly, in the southern part, two smaller hill ranges running parallel to each other appear and are trending in NW-SE direction, south of Raghunathpur. The Subarnarekha River cuts across the main hill range north-west of Jamshedpur city situated in the East Singhbhum district.

The climate of the area is moderate to extreme and characterized by hot summer and cold winter. Rainfall in this area is also very moderate. The summer season starts from March and continued to June until rain comes and temperature ranges from 27°C to 46°C. May and June are the two months when hot wind blows throughout the day. Monsoon spans from July to September with maximum rains generally in August. Normal rainfall varies from 100cm to 120cm. humidity reaches highest during monsoon, which varies between 70% to 80%, but in summer, it goes down to 25%. Winter starts at November and continues to February with its acme in January mostly. Temperature varies from 25°C to 10°C normally. In some day it goes down to 4-5 °C with a cold wave from north. The underground water resources of the area are poor and surface waters mainly from ponds are not available in summer. Dug wells are generally shallow and trap the shallow local underground pools, which become dry in summer.



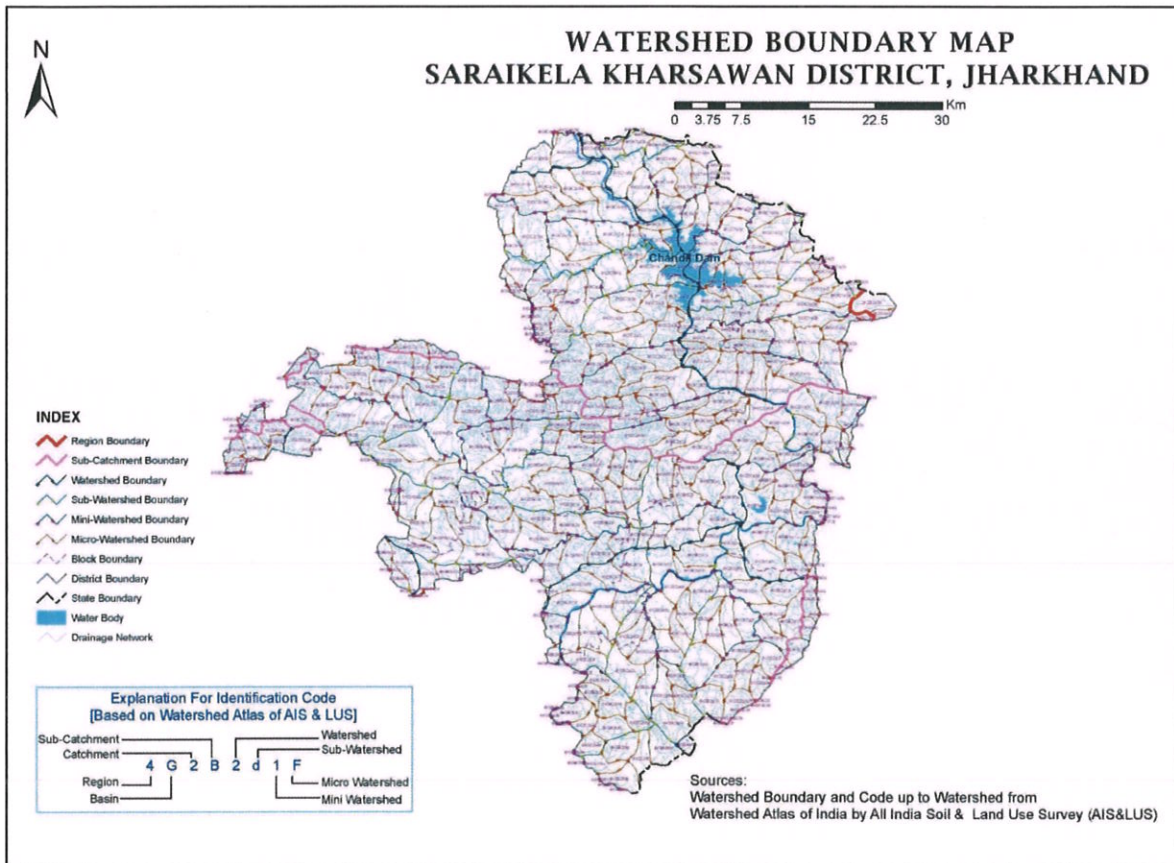
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Drainage:

The principal rivers of the district are Subarnrekha and Kharkhai Rivers. The general trend of the drainage is from NW-SE and SW-SE. The structural features particularly the foliation and joints exert profound impact upon the drainage and control the drainage pattern of the district.

The river Subarnarekha rises near Ranchi and enters the district from north-west near Saharbera. It then flows south-east for nearly 6.6 km and leaves the district near Gamhariya after it meets Kharkai river.



Source: Jharkhand Space Application Centre

Watershed boundary map of Saraikela-Kharsawan District

1.3 Connectivity:

Saraikela-Kharsawan is well connected to the rest of the state in India by rail and road connections.

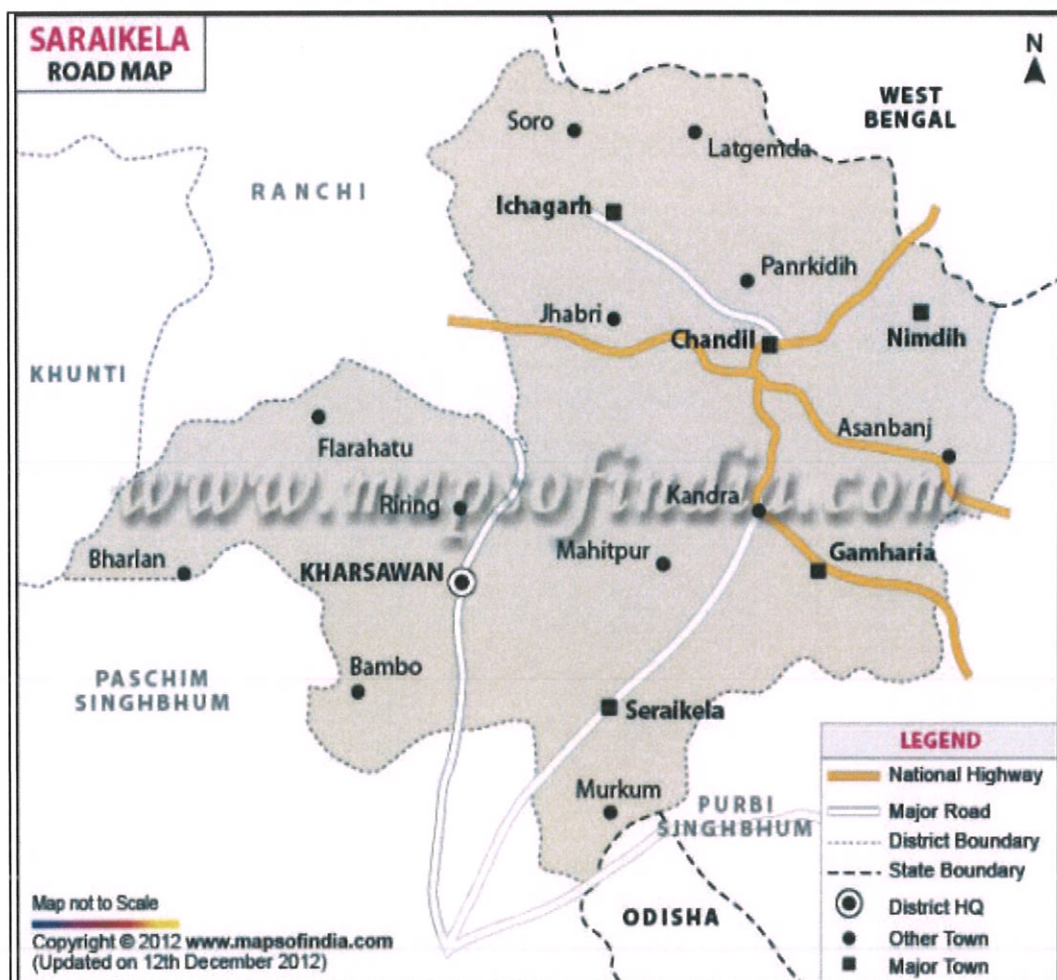


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This district is surrounded by the district East Singhbhum in its East, West Singhbhum in its West, Ranchi district and Purulia district of West Bengal in its North and Mayurbhunj, Kyonjhar of Sundergarh district of Odisha in its South.

Saraikela Kharsawan district is a part of the Indian state, Jharkhand. The nearest Domestic Airport is Sonari Airport, located in the city Jamshedpur. Another Airport is Birsa Munda Airport, Ranchi. Ranchi is approx 120 km far from Jamshedpur City. The railway station named Tata Nagar is located in the City, and well connected. District is well connected to other parts of the country via roadways. National Highway 2, 6 and 33 passes through Jamshedpur and connects it to Kharagpur and Kolkata.



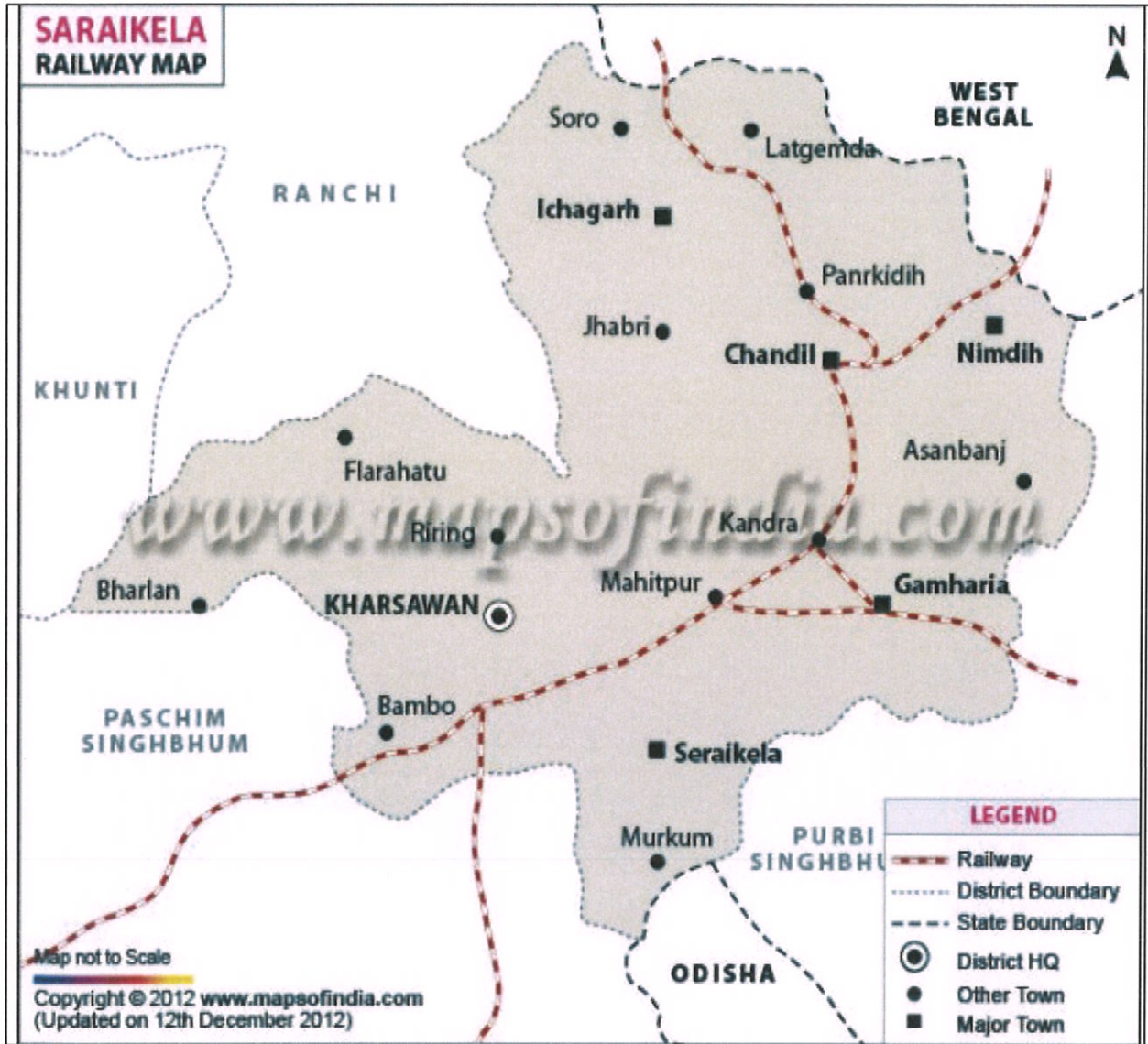
Source: www.mapsofindia.com

Road map of Saraikela-Kharsawan District



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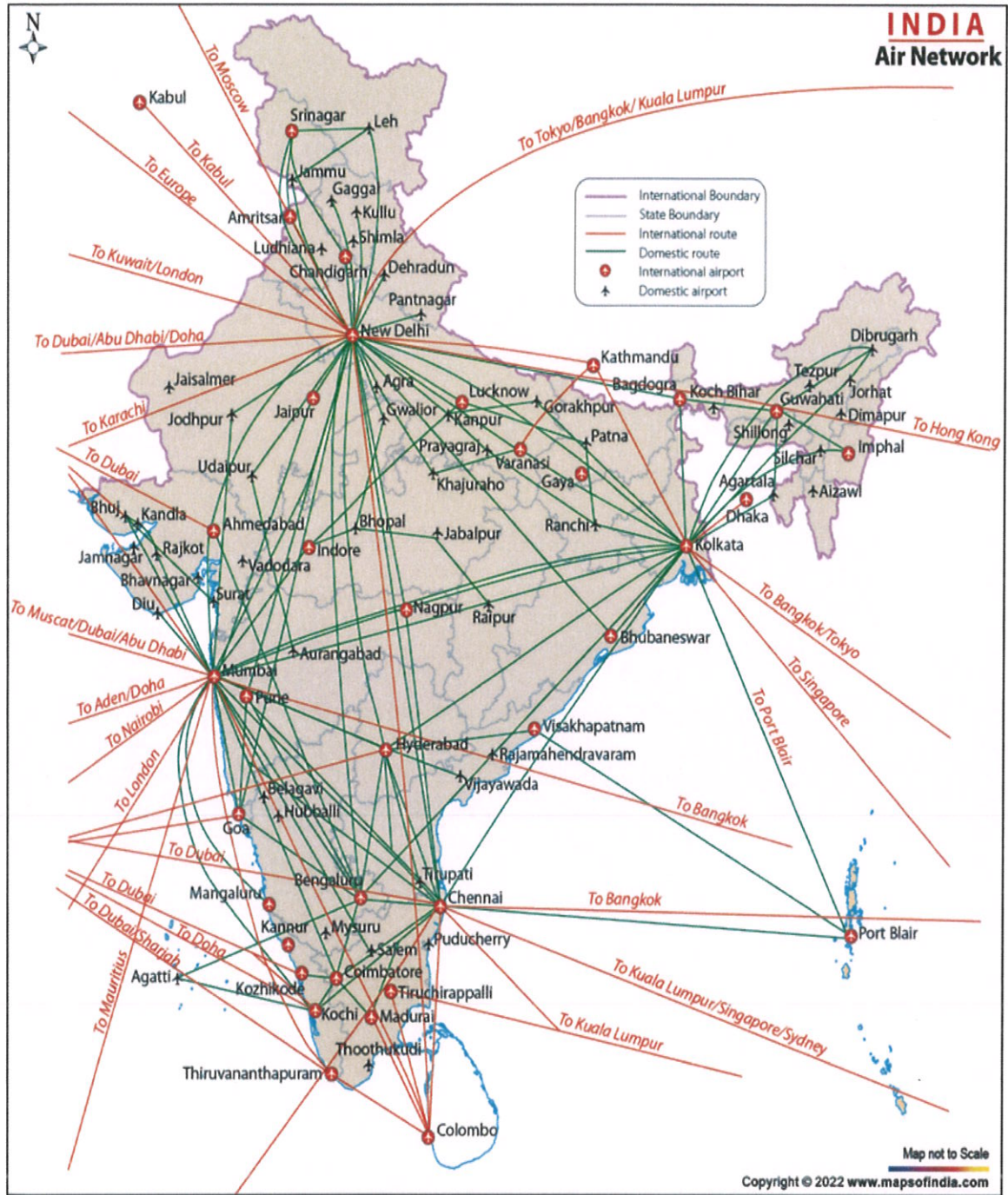




Source: www.mapsofindia.com

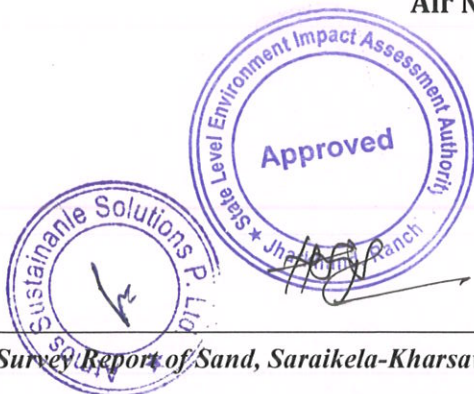
Railway map of Saraikela-Kharsawan District





Source: www.mapsofindia.com

Air Network of India



CHAPTER- 02

OVERVIEW OF MINING ACTIVITY IN THE DISTRICT

General Information:

Saraikela-Kharsawan district, formerly the Princely States of Seraikela and Kharsawan is one of the twenty-four districts of Jharkhand state in eastern India. Seraikela town is the district headquarters of Saraikela Kharsawan district.

The district shares border with East Singhbhum District to the East, West Singhbhum District to the South, Purulia District to the North. It shares Border with West Bengal State to the East. Saraikela Kharsawan district comprises of two subdivisions namely Seraikela and Chandil and nine blocks/circles namely Saraikela, Kharsawan, Gamharia, Rajnagar, Kuchai, Chandil, Ichagarh, Nimdih, Kukru. It occupies an area of approximately 2724.55 square kilometres. . It's in the 209 meters to 178 meters elevation range.

Surrounded by lush green forests, hillocks, serpent like rivers and rivulets, Seraikela Town is situated on the bank of Kharkai River. The district has not only a rich cultural heritage but also has large deposits of minerals like Kyanite, Asbestos, quartz etc. and other valuable minerals.

Approach to Sand Mining:

River sand mining is a common practice as habitation concentrates along the rivers and the mining locations are preferred near the markets or along the transportation route, for reducing the transportation cost. River sand mining can damage private and public properties as well as aquatic habitats. Excessive removal of sand may significantly distort the natural equilibrium of a stream channel.

Mainly three types of minor minerals constituents such as sand, stone and Bajri are required for any type of construction apart from other material like cement and steel.

In earlier times, the houses/buildings were constructed in form of small dwellings with walls made up of mud plaster, stone and interlocking provided with wooden frames and there were negligible commercial as well as developmental activities resulting in less demand of building material. However with the passage of time, new vistas of developmental activities were started. The quantity of minor minerals consumption in a particular area is a thermometer to assess the development of the area. Thus with the pace of development activities, the consumption of minor minerals also increased. As such the demand of minor minerals in the district has started an increasing trend. In



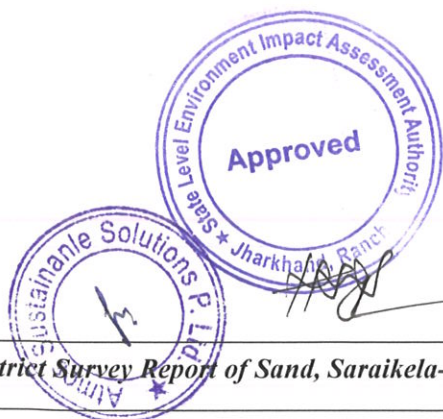
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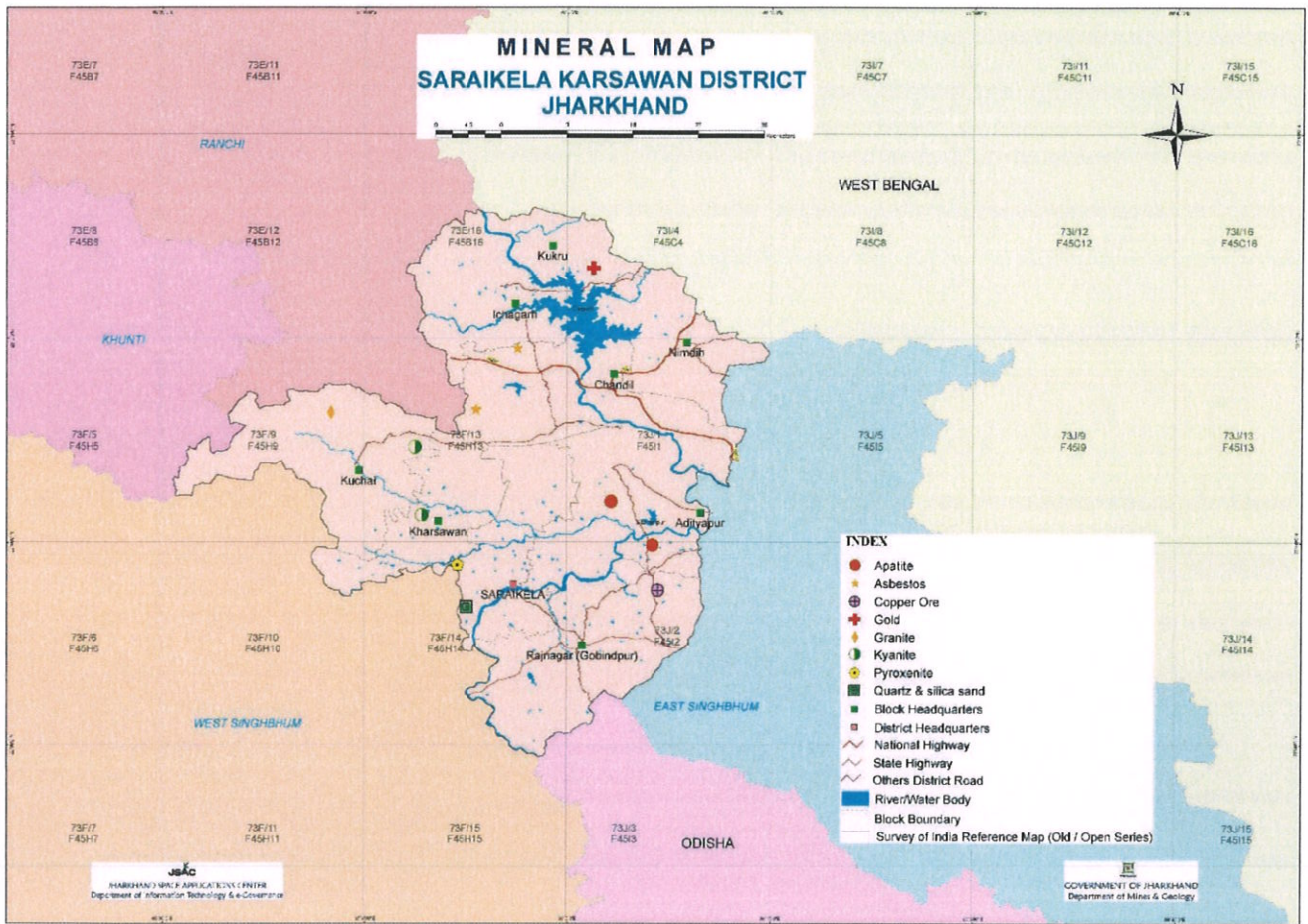


order to meet the requirement of raw material for construction, the extraction of sand is being carried out exclusively from the river beds.

Main Objectives of Sustainable Sand Mining:

- To ensure that sand and gravel mining is done in environmentally sustainable and socially responsible manner.
- To ensure availability of adequate quantity of aggregate in sustainable manner.
- To improve the effectiveness of monitoring of mining and transportation of mined out material.
- Ensure conservation of the river equilibrium and its natural environment by protection and restoration of the ecological system.
- Avoid aggradations at the downstream reach especially those with hydraulic structures such as jetties, water intakes etc.
- Ensure that the rivers are protected from bank and bed erosion beyond its stable profile.
- No obstruction to the river flow, water transport and restoring the riparian rights and in stream habitats.
- Avoid pollution of river water leading to water quality deterioration.
- To prevent depletion of ground water reserves due to excessive draining out of ground water.
- To prevent ground water pollution by prohibiting sand mining on fissures where it works as filter prior to ground water recharge.
- To maintain the river equilibrium with the application of sediment transport principles in determining the locations, period and quantity to be extracted.
- Streamlining and simplifying the process for grant of environmental clearance (EC) for sustainable mining.





Mineral Map of Saraikela Kharsawa District

Amnos Sustainable Solutions P. Ltd.

Approved

State Level Environment Impact Assessment Authority
Jharkhand, Ranchi

CHAPTER- 03 GENERAL PROFILE OF THE DISTRICT

Saraikela-Kharsawan district, formerly the Princely States of Saraikella and Kharsawan district is one of the twenty-four districts of Jharkhand state in eastern India. Saraikela town is the district headquarters of Saraikela Kharsawan district. The district is well known for Saraikela Chhau, one of the three distinctive styles of the chhau dance. This district was carved out from West Singhbhum district in 2001. The district was formed from the Odia princely states of Saraikela and Kharsawan, after the independence of India. It occupies an area of approximately 2724.55 square kilometres. It's in the 209 meters to 178 meters elevation range.

The district is situated between Longitude, East Between 85°30'14" & 86°15'24" and Latitude, North Between 22°29'26" & 23°09'34" . The district shares border with East Singhbhum District to the East, West Singhbhum District to the South, Purulia District to the North. It shares Border with West Bengal State to the East. Saraikela Kharsawan district comprises of two subdivisions namely Saraikela and Chandil and nine blocks/circles namely Saraikela, Kharsawan, Gamharia, Rajnagar, Kuchai, Chandil, Ichagarh, Nimdih, Kukru.

Surrounded by lush green forests, hillocks, serpent like rivers and rivulets, Saraikela Town is situated on the bank of Kharkai River. The district has not only a rich cultural heritage but also has large deposits of minerals like Kyanite, Asbestos, quartz etc. and other valuable minerals.

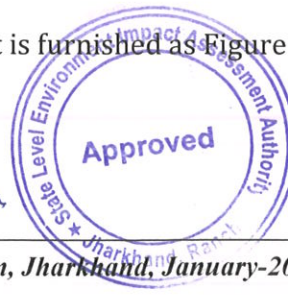
The climate of the area is moderate to extreme and characterized by hot summer and cold winter. Rainfall in this area is also very moderate. The summer season starts from March and continued to June until rain comes and temperature ranges from 27°C to 46°C. May and June are the two months when hot wind blows throughout the day. Monsoon spans from July to September with maximum rains generally in August. Normal rainfall varies from 100cm to 120cm. humidity reaches highest during monsoon, which varies between 70% to 80%, but in summer, it goes down to 25%. Winter starts at November and continues to February with its acme in January mostly. Temperature varies from 25°C to 10°C normally.

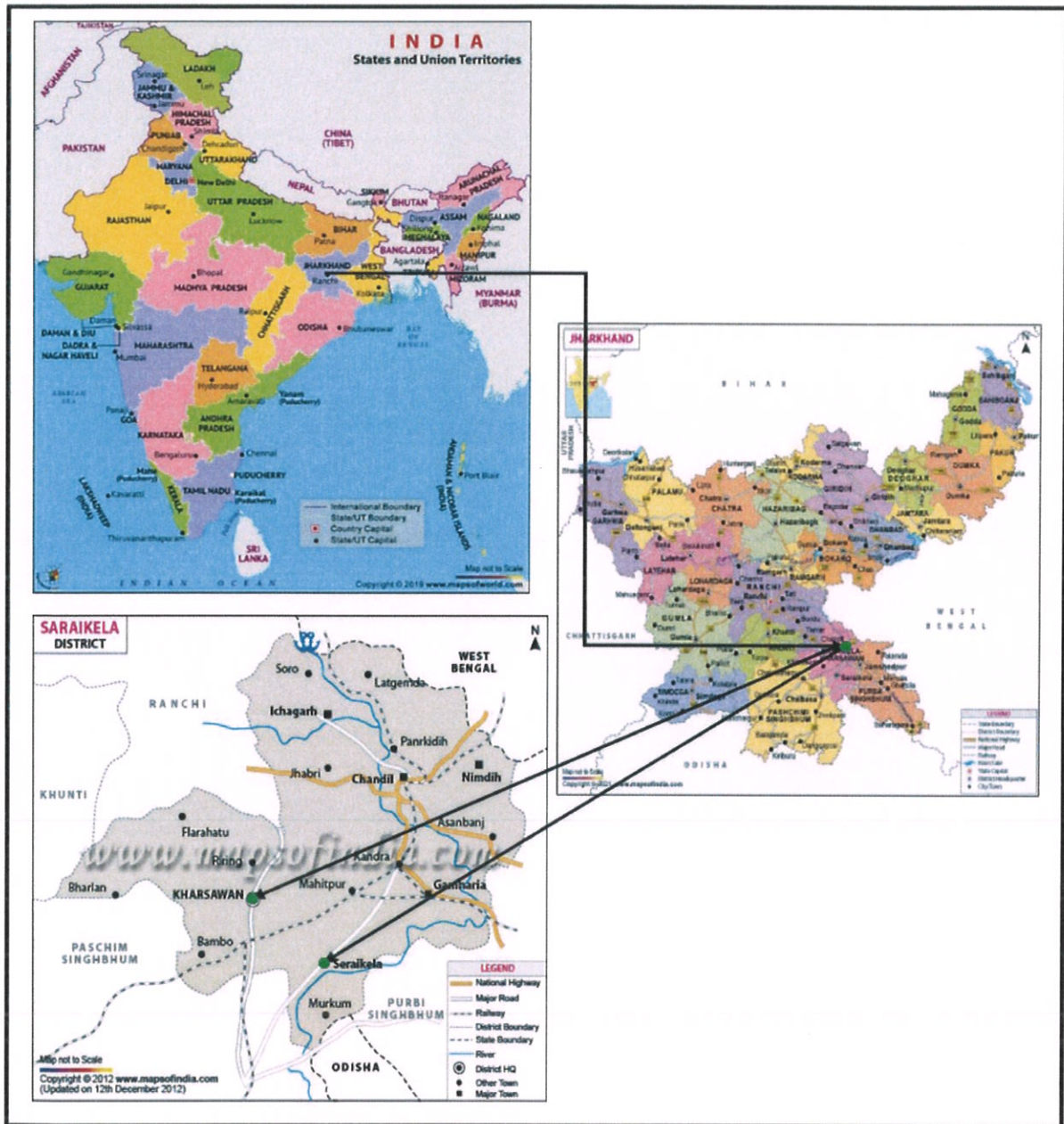
The district is rich in minerals and is found abundantly. Iron Ore, Kyanite, Potstone, Soapstone, Pyrophyllite, Pyroxine and Gold are the main minerals.

A location map of Saraikela-Kharsawan District is furnished as Figure.

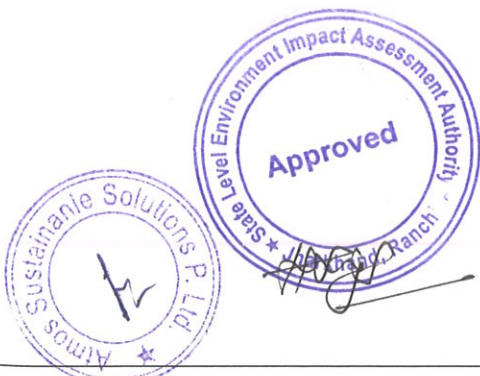


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Location map of Saraikela-Kharsawan district, Jharkhand





Block map of Saraikela-Kharsawan District, Jharkhand

a) Climate Condition

The climate of the area is moderate to extreme and characterized by hot summer and cold winter. Rainfall in this area is also very moderate. The summer season starts from March and continued to June until rain comes and temperature ranges from 27°C to 46°C. May and June are the two months when hot wind blows throughout the day.

Monsoon spans from July to September with maximum rains generally in August. Normal rainfall varies from 100cm to 120cm. humidity reaches highest during monsoon, which varies between 70% to 80%, but in summer, it goes down to 25%. Winter starts at November and continues to February with its acme in January mostly. Temperature varies from 25°C to 10°C normally. In some day it



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goes down to 4-5 °C with a cold wave from north.

The underground water resources of the area are poor and surface waters mainly from ponds are not available in summer. Dug wells are generally shallow and trap the shallow local underground pools, which become dry in summer.

Rainfall is the main source of ground water recharge but most part of it passes away as surface runoff. Water retention capacity of soil or regolith is poor in this area as soil thickness is minimum at many place. The following varieties of plants are present such as Mango, Neem, Kul (Ber), Jam Sal, Bot, Shimul, Bel, Gamar, Babool etc.

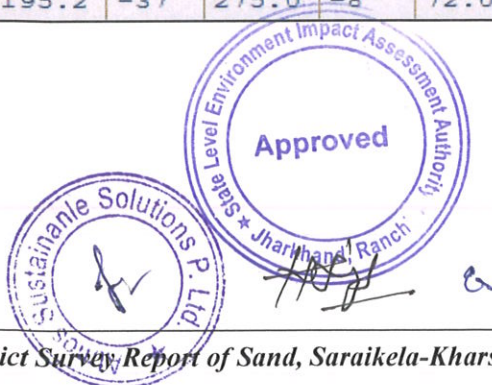
The crops in this area mainly depend on good monsoon. Rice is the principal crop followed by wheat, maize etc. Ravi and kharif crops are grown in very limited areas where water supply in winter is present. Potato and other vegetables grow along the channel floors where the thickness of soil is much more and contain water or moisture.

Details of rainfall data of five years (from 2016 to 2020) is furnished in Table No3.2.

Table No. 3.2: Details of rainfall data of five years (from 2016 to 2020)

YEAR	JAN		FEB		MAR		APR		MAY		JUN	
	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP
2016	9.9	-45	4.8	-77	1.4	-94	3.9	-84	93.5	82	77.2	-68
2017	0.0	-100	0.0	-100	0.0	-100	31.4	29	120.1	134	119.4	-50
2018	0.0	-100	0.0	-100	0.0	-100	142.7	487	41.6	-19	130.7	-46
2019	0.0	-100	5.6	-64	55.9	239	34.3	60	53.9	-2	126.0	-43
2020	22.9	49	8.8	-44	92.2	459	133.9	526	55.8	1	189.9	-13

JUL		AUG		SEPT		OCT		NOV		DEC	
R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP
271.7	-16	445.7	38	272.6	9	13.4	-81	0.0	-100	0.0	-100
539.3	67	304.8	-5	87.5	-65	124.1	73	2.7	-74	0.0	-100
262.9	-18	200.4	-38	131.7	-47	15.2	-79	0.0	-100	19.6	263
160.4	-48	260.6	-13	227.7	1	157.9	174	0.0	-100	16.1	209
195.2	-37	275.0	-8	72.0	-68	48.6	-16	19.8	122	0.0	-100



b) Demography

As per census of 2011, the total population of the district was 1,065,056 persons. The total urban population is 258746 persons whereas the total rural population is 806310 persons.

Demography

Subject	Information
No. of Sub Divisions	02
No. of Blocks	09
No. of Panchayats	132
No. of Circles	09
Total No. of village	1148
Total Area	2724.55 Sq.Km
Total Forest Area	58572.39Hec.
Longitudinal Extent	85°30'14" & 86°15'24"
Latitudinal Extent	22°29'26" & 23°09'34"
Total Population	1065056
Total Male Population	544411
Total Female Population	520645
Child Population (0 - 6) Years	159596
Sex Ratio	958
Density (persons per sq. km.)	390

Block wise population of the district (2011)

Distribution of Rural and Urban Population by sex in the district of Saraikela Kharsawan									
(Number)									
Sub-Division	Rural Population			Urban Population			Total Population		
C.D. Block / M.C. / M	Male	Female	Total	Male	Female	Total	Male	Female	Total
Kuchai	32443	31877	64320	0	0	0	32443	31877	64320
Kharsawan	45001	43641	88642	0	0	0	45001	43641	88642
Saraikela	36649	36476	73125	3340	3042	6382	9989	39518	79507
Gobindpur (Rajnagar)	67810	68790	136600	0	0	0	67810	68790	136600
Adityapur (Gamharia)	60995	58060	119055	8272	7390	15662	69267	65450	134717
Chandil	56163	53691	109854	24837	23258	48095	81000	76949	157949
Nimdih	40327	38312	78639	0	0	0	40327	38312	78639
Ichagarh	42391	40708	83099	0	0	0	42391	40708	83099
Kukru	27069	25907	52976	0	0	0	27069	25907	52976
Nagar Nigam Adityapur	0	0	0	91664	82691	174355	91664	82691	174355

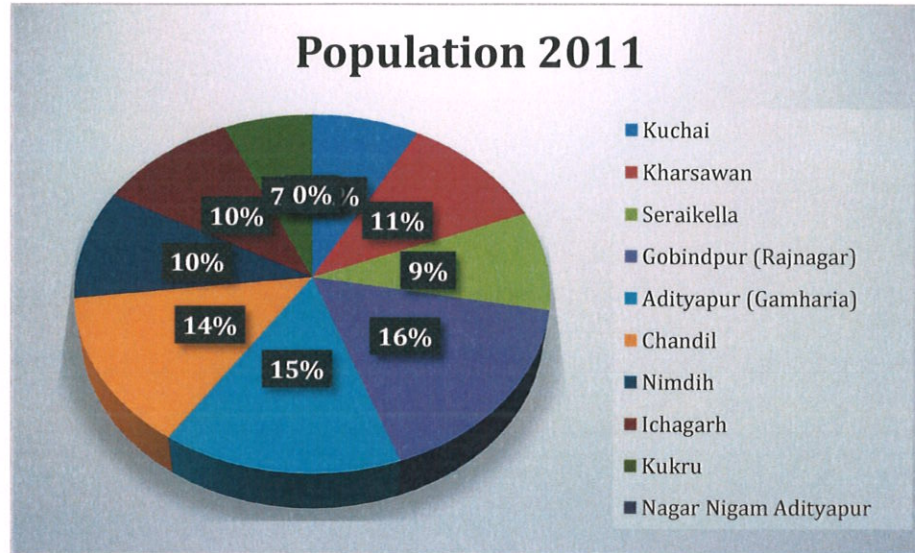


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Nagar Panchayat Saraikela	0	0	0	7450	6802	14252	7450	6802	14252
District Total	408848	397462	8063 10	13556 3	123183	25874 6	44411	520645	10650 56

Source: Census of India, 2011



Pie Chart showing Block-wise population distribution of Saraikela-Kharsawan District

c) Cropping pattern

The cropping pattern is generally influenced by varied soil type and different climatic conditions. The principal crop of the area are Paddy, maize, Pulses and Oilseeds. The horticulture crops are Cauliflower, cabbage, tomato, Brinjal, L. finger, cucumber etc.



d) Topography & Terrain

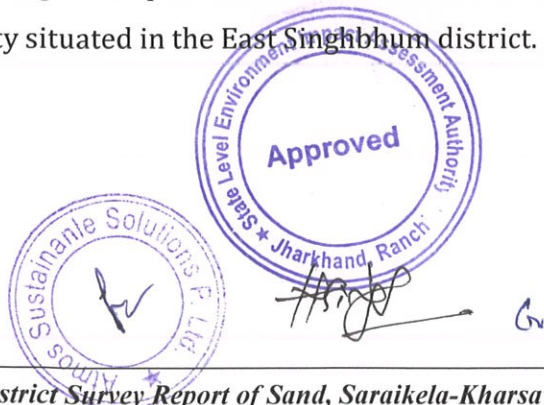
The total geographical area of the district is 2657 sq.km. It occupies an area of approximately 2724.55 Sq Km. It's in the 209 meters to 178 meters elevation range. Surrounded by lush green forests, hillocks, serpent like rivers and rivulets, Seraikela Town is situated on the bank of Kharkai River. The district has not only a rich cultural heritage but also has large deposits of minerals like Cyanide, Asbestos, quartz etc. and other valuable minerals.

The district falls in the rain shadow of the Santhal Pargana plateau. The average annual precipitation is 1307.6 mm and the average number of rainy days is 59. Even this meager precipitation is erratic which coupled with long inter spell forces the district to suffer from drought.

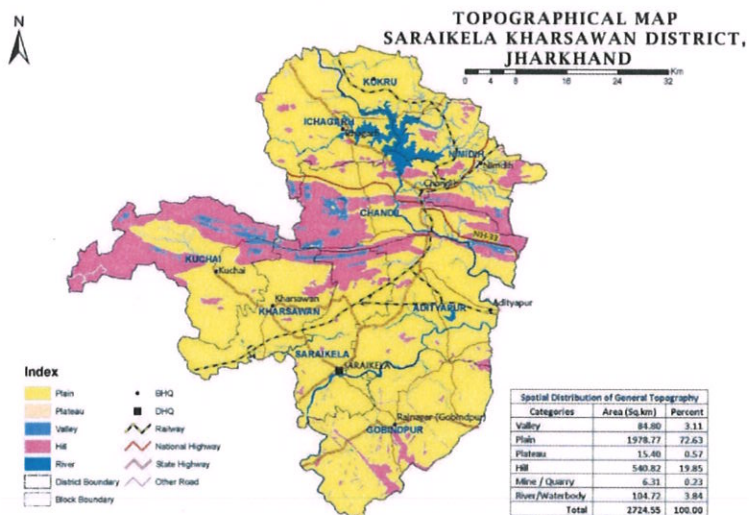
The predominant physical feature over major part of the district is the rolling topography dotted with isolated inselbergs except in the Borijore and Sundarpahari blocks. A substantial part of Borijore and Sundarpahari block is under forest cover. The altitude of the land surface increases from west to the east. The major hills are confined to the eastern part of the district comprising the Gandeshwari Pahar (238.41m) and Kesgari Pahar (268.29m) while in the western part of the district isolated hills are in the form of the inselbergs and other small hillocks.

The soil is mostly acidic, reddish yellow; light textured and highly permeable with poor water holding capacity. The southern part of the district is underlain by Granite-gneiss of Achaean age forming the basement. These occur as large batholiths and are intruded by basic rocks.

The Saraikela-Kharsawan district is characterized by a terrain with distinct geomorphological set-up. A prominent east-west trending hill range virtually cuts across the district dividing the district into two halves; the northern part and the southern part. In the northern part, another smaller hill range runs parallel to the main range north of Chandil town. Similarly, in the southern part, two smaller hill ranges running parallel to each other appear and are trending in NW-SE direction, south of Raghunathpur. The Subarnarekha River cuts across the main hill range north-west of Jamshedpur city situated in the East Singhbhum district.



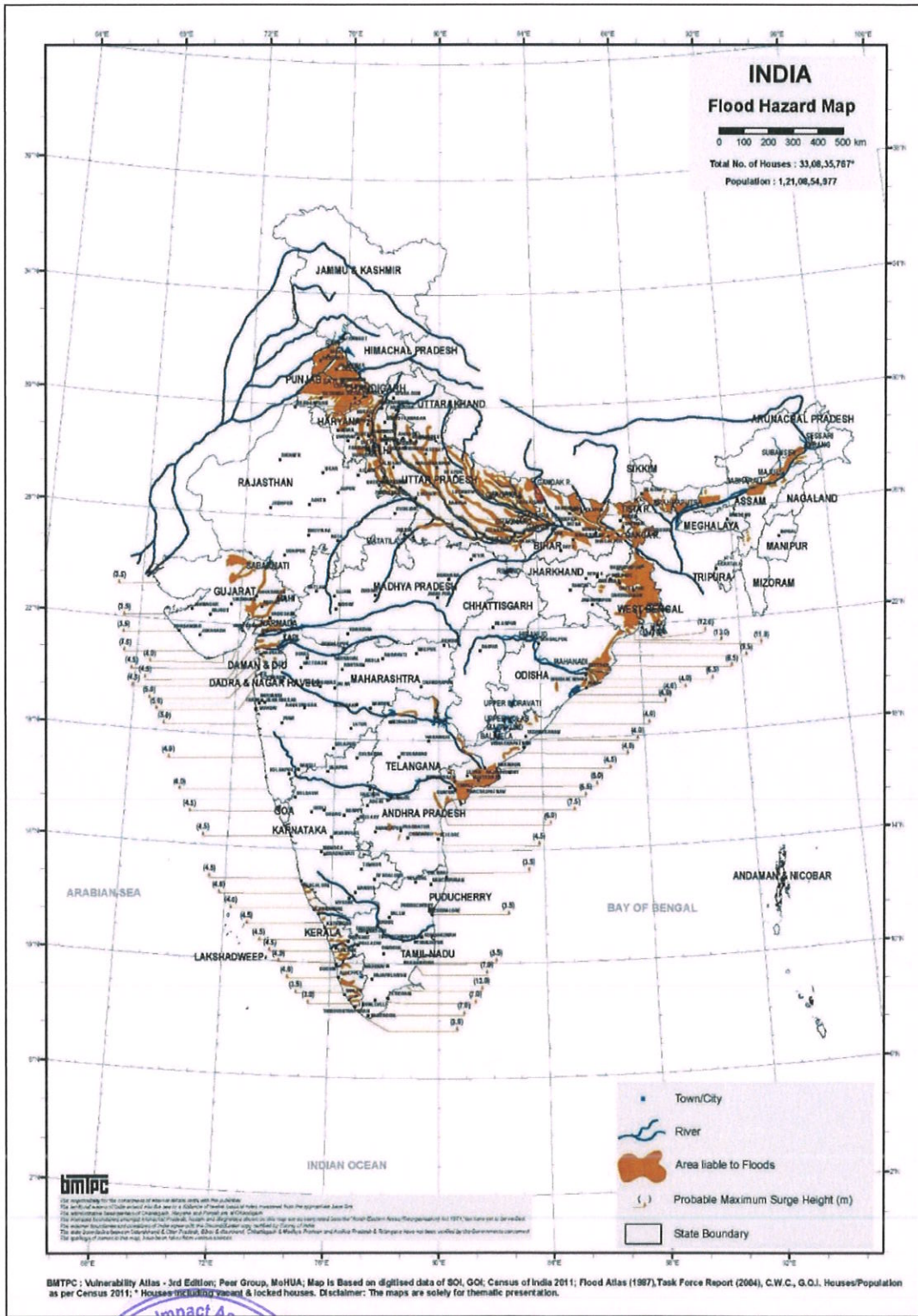
In general, the terrain of Saraikela-Kharsawan district varies from nearly level in the plains to very steep in the hilly areas and dissected slopes. Major portion of the district is characterized by the presence of nearly level to very gentle slopes in the range of 0–3 per cent. An area of 1192 sq. km representing 48.04 per cent of the Saraikela-Kharsawan district is a plain with 0–1 per cent slope, and 714 sq. km. representing 28.78 per cent of the total area is very gently sloping (1–3 per cent). These two categories of slope together represent about 77 per cent of the Saraikela-Kharsawan district, indicating that the terrain is mostly a plain country.



d) Floods in district:

The state of Jharkhand is predominantly a hilly state where the problem of flooding was rare till sometime back. However, the erosion of embankments spread of population and general disturbance in ecology and inability of identifying the catchment areas, the incidence of Flash floods have become frequent. The floods have occurred in the following 11 districts of the state, Dumka, Godda, Deogarh, Sahebganj, Pakur, Dhanbad, East and West Singhbhum, Saraikela-Karsawan, Gumla and Hazaribagh during the years 2000-2004.





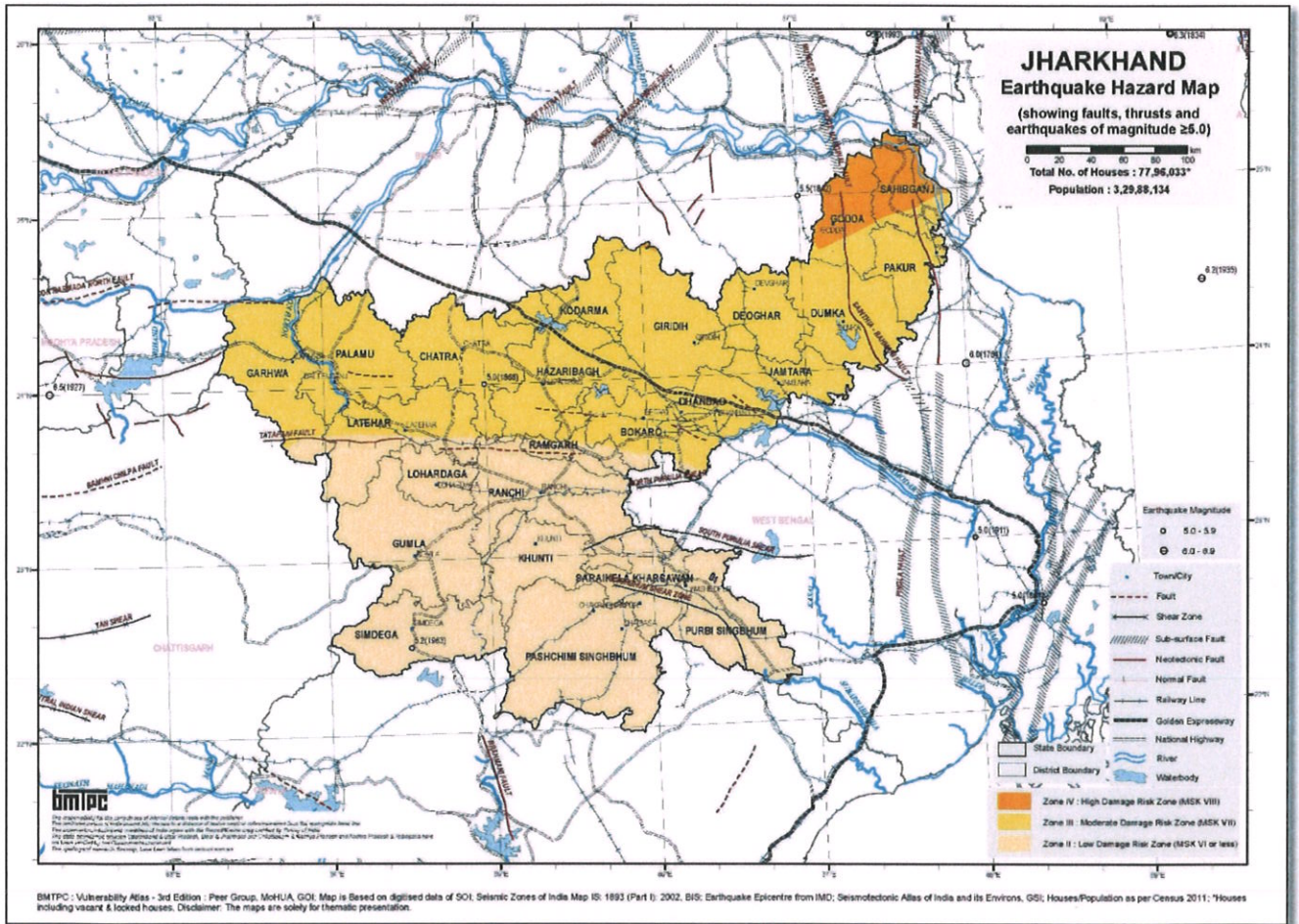
Source: BMPTC
Flood hazard map



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e) Seismicity

The state of Jharkhand falls in a region of low to high seismic hazard. As per the 2002 Bureau of Indian Standards (BIS) map, this state also falls in Zones II, III & IV. Historically, parts of this state have experienced seismic activity in the M5.0 range.



District Earthquake Map

f) Flora

These forests are found scattered throughout the district but the bulk lies in south-western parts where it runs unbroken in long stretches covering a number of steep rocky hills and intervening valleys. This type of topography becomes a determining factor in the distribution, nature and type of vegetation which varies from a dry thorny type on very dry, exposed, badly eroded rocky hills to semi-evergreen type in sheltered damp valleys. But apart from these two extreme types, the ruling vegetation is moist tropical deciduous forest which tends to become dry deciduous on ridges



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and exposed spurs on open southern aspects.

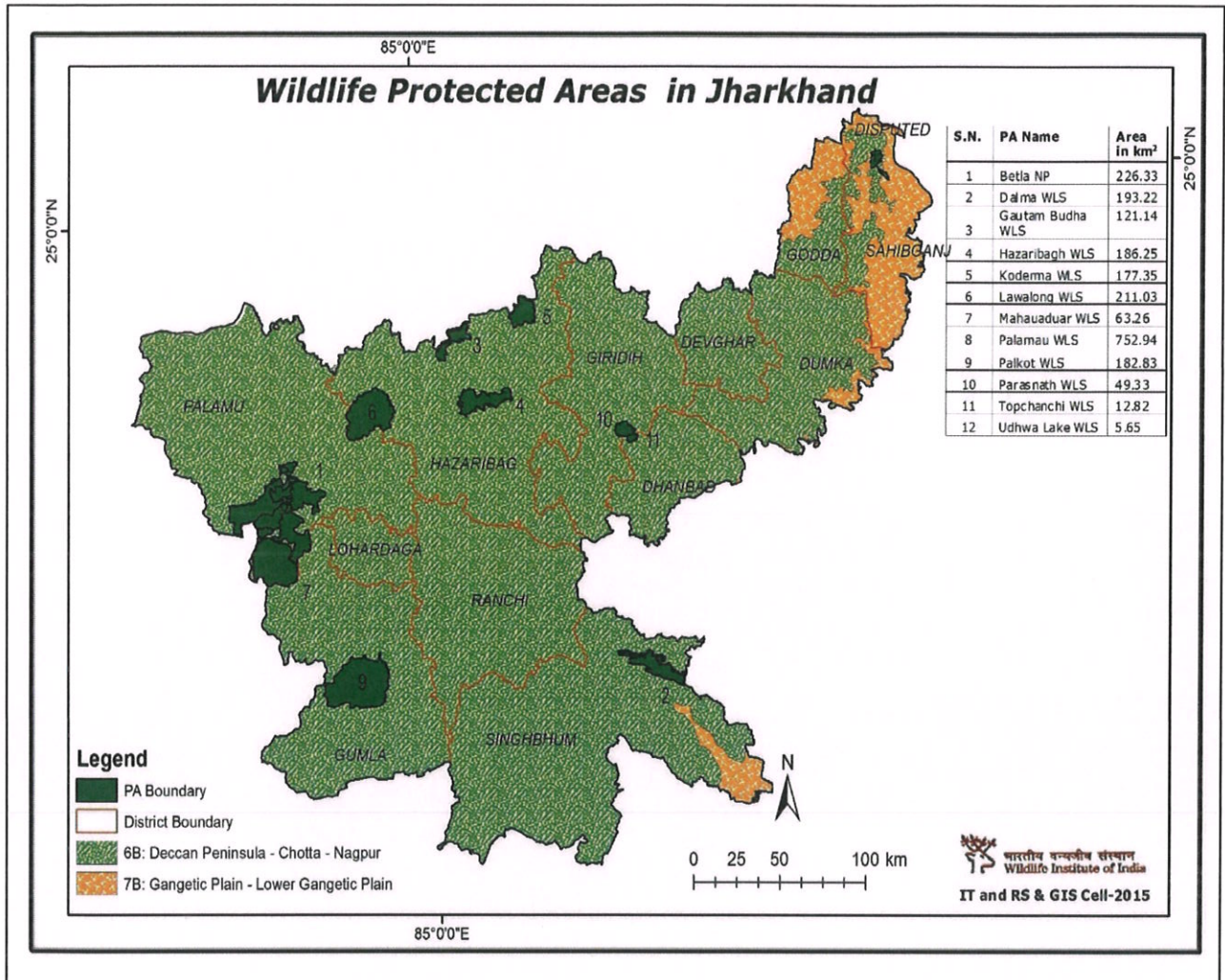
The Gymnosperm, *Gnetum scandens* is found in this district in the valleys. The stemless palm, *Phoenix acaulis*, though seen elsewhere also on the Chotanagpur and Palamauplateaux is abundant. Especially in the area south of Tatanagar *Cassytha filliformis*, the green thread like parasite, several species of *Loranthus* and several epiphytic orchids are seen here. The white barked gouty stemmed trees of *Sterculia urens* and *Boswellia serrata* are very conspicuous against the background of the black rocks.

g) Fauna

Elephants are frequently met with in the forests of this district and their number seems to be on the increase. Wild elephants are common in the jungles on the Dalma range in the north of the district. Heavy damage is caused mainly in rains to cultivation, young bamboo clumps and regeneration areas. In drier periods of the year they confine themselves to damp valleys. Elephants, Hynas, Sloth, Bear, Wild Dog, Barking Deers are found in the District.

Tigers and panthers were present in the past but make very rare appearance now. At times they do attack village cattle and in stray cases human beings. Bears are present in large number and attack at times human being and do heavy damage to crops and fruits. Pigs are present in fairly large number and cause damage to cultivation. Wild dogs are seen frequently.





Wildlife Protected area in Jharkhand District



CHAPTER- 04
GEOLOGY OF THE DISTRICT

The study area is situated in the south of this thrust zone and a general stratigraphic sequence of this area is given below- The district is situated between Longitude, East Between 85°30'14" & 86°15'24" and Latitude, North Between 22°29'26" & 23°09'34". The District shares border with East Singhbhum District to the East, West Singhbhum District to the South, Purulia District to the North. It shares Border with West Bengal State to the East. Seraikela Kharsawan district comprises of two subdivisions namely Seraikela and Chandil and nine blocks/circles namely Saraikela, Kharsawan, Gamharia, Rajnagar, Kuchai, Chandil, Ichagarh, Nimdih, Kukru. It occupies an area of approximately 2724.55 square kilometres. . It's in the 209 meters to 178 meters elevation range.

Surrounded by lush green forests, hillocks, serpent like rivers and rivulets, Saraikela Town is situated on the bank of Kharkai River. The district has not only a rich cultural heritage but also has large deposits of minerals like Kyanite, Asbestos, quartz etc. and other valuable minerals. Geologically the area is comprised of Archean lava, laterite and pre-cambrian fold mountains. The study area is situated in the south of this thrust zone and a general stratigraphic sequence of this area is given below-

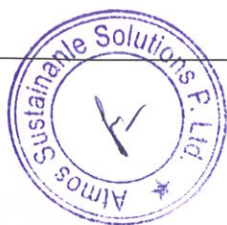
Geological of District

(Source: CGWB)

Age Group	Series	Stage	Lithology
Recent	Alluvium		Sand, silt and clay
Pre Cambrian	Iron Ore Series	Chaibasa Stage	Quartzites ,Mica Schist, and Quartz- mica-schist
		Singhbhum shear zone	Granite and granitic - gneisses

Jharkhand state as part of the Indian Peninsular Shield is a cratonic block of the earth's crust. Jharkhand is known for diversified geological set up. The whole of Singhbhum region is considered as a natural geological museum. Geologically, Jharkhand consist of different types of rocks formations ranging from Precambrian to Cenozoic Era.

Structurally the state can be divided into "Southern Singhbhum Province" and "Northern Singhbhum Province" divided by Tamar-Khatra Fault (TKF) popularly known as the "Northern



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Singhbhum Shear Zone” The famous “Singhbhum Thrust” is the store house of several important minerals traversing East Singhbhum, West Singhbhum and Saraikela-Kharsawan district. The SSZ is the host to mineral occurrence of economic importance. This belt hosts several copper, uranium and apatite-magnetite and several other deposits. Besides these, nickel, gold, molybdenum, silver, tellurium and selenium are also extracted as by-products from the copper and uranium ores.

Geological Saraikela-Kharsawan district lies nearest to the Singhbhum shear zone Dalma Thrust and SSZ is the store house of mineral hence there are number of economic and strategically mineral, here the mining activity is involved in sand as in Jodia, Tiruldih, Seherbera, etc. Quartzite as in Patahesel (Seraikela) Jaikam (Gamharia) Stone as in Lengdih (Chandil), Medki (Rajnagar) besides this Uranium is also extracted from Mahuldih (Gamharia), besides above minerals, Saraikela-Kharsawan is also rich Iron Ore, Kyanite, Potstone, Soapstone and Pyrophyllite.

The geological formations which occur in the district mainly comprise : (1) Granites and gneisses, (2) Iron-ore series, (3) Dharwar series - Older metamorphics, (4) Dhanjori and Dalma lava / basic rocks, and (5) Neo-dolerites. The granites and gneisses of Archaean age are intrusive into the oldest sedimentary rocks, now highly metamorphosed, and known as Singhbhum granite and gneiss and the Chhotanagpur granite gneiss. Singhbhum granite varies in composition from potash granite to granodiorite and contains orthoclase, microcline, acid plagioclase, biotite & hornblende. Chhotanagpur granite-gneiss is generally coarse and porphyritic. It is composed of quartz, microcline, orthoclase, oligoclase, biotite and a little apatite. Iron ore series in this district are represented by shales, purple and grey limestones, conglomerates and purple sandstone. The shales contain some deposits of manganese ores. They are practically unmetamorphosed but subjected to folding. The conglomerates contain pebbles derived from Singhbhum granite. The limestone rests conformably on the basal sandstone, but is not extensive being lenticular.

Older metamorphics comprise Gondites associated with phyllites. They are succeeded by carbonaceous quartzites and phyllites, dolomitic and calcitic marbles and carbonaceous phyllites and are being intercalated by phyllites and mica-schists. Volcanic lava flows are younger than



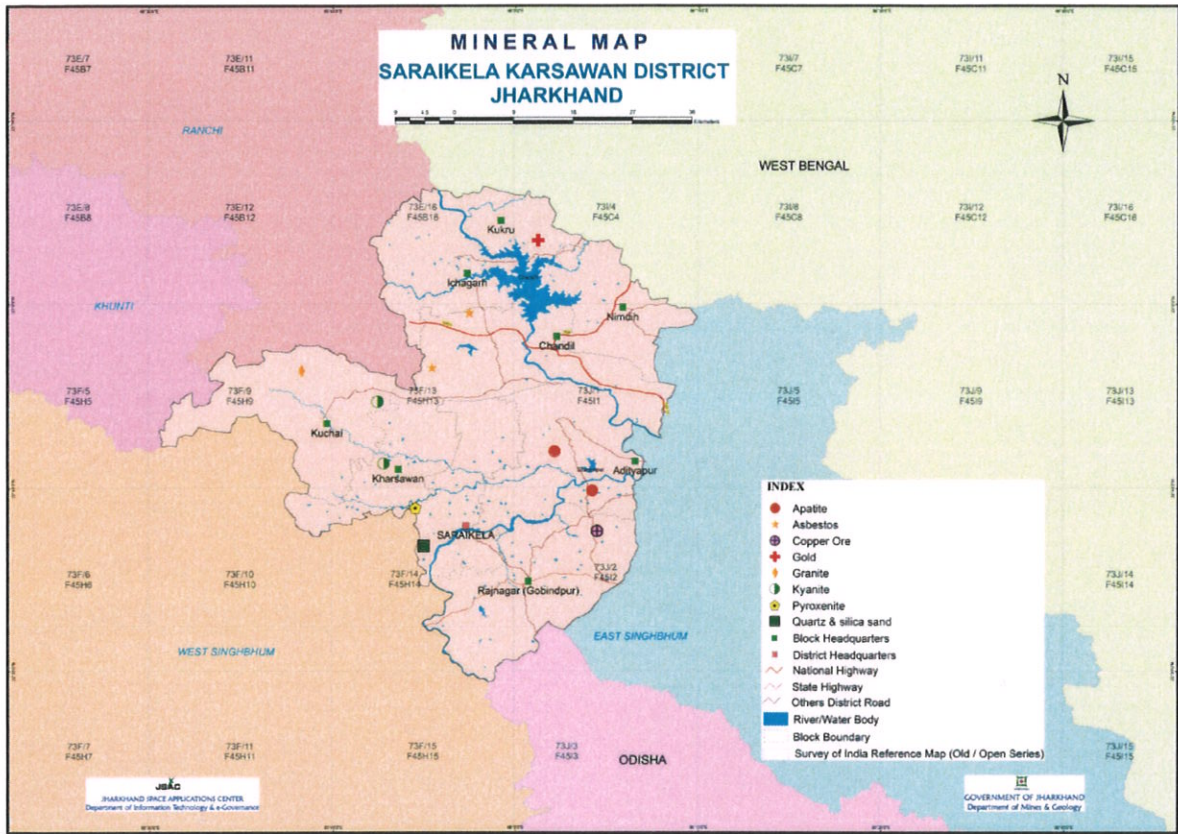
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iron ore series and are known as Dalma traps. They are fine grained but are reported to have been almost entirely recrystallised to a hornblende rock. The original amygdules have been preserved, even to the radiating structure of the original zeolites now altered to epidote. They correlate with Dhanjori lava to a certain extent. The Palaeoproterozoic Dhanjori formation overlies the Singhbhum granite and is in turn overlain by the Chaibasa formation constituting the Singhbhum group. In the upper part basalt and andesite basalt flows are intercalated. The Neodolerite is the latest intrusive appearing as dykes in the Singhbhum granite. The dykes have a major direction of NNE-SSW and a subsidiary one NNW-SSE. They vary in width from a few metres to as much as 500-600 metres. They are composed of dolerites or quartz-dolerite with granophyric structure. The thicker dykes are gabbroid or noritic in the central portion. Besides, laterites are found as cappings on plateaus or mounds in extreme south-eastern part of the district. Alluvium of both older and recent formations occurs in flood plains and valleys.



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District Resource Map of Saraikela-Kharsawan District
(Source: Govt. of Jharkhand Dept. of Mines & Geology)



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CHAPTER- 05 DRAINAGE OF IRRIGATION PATTERN

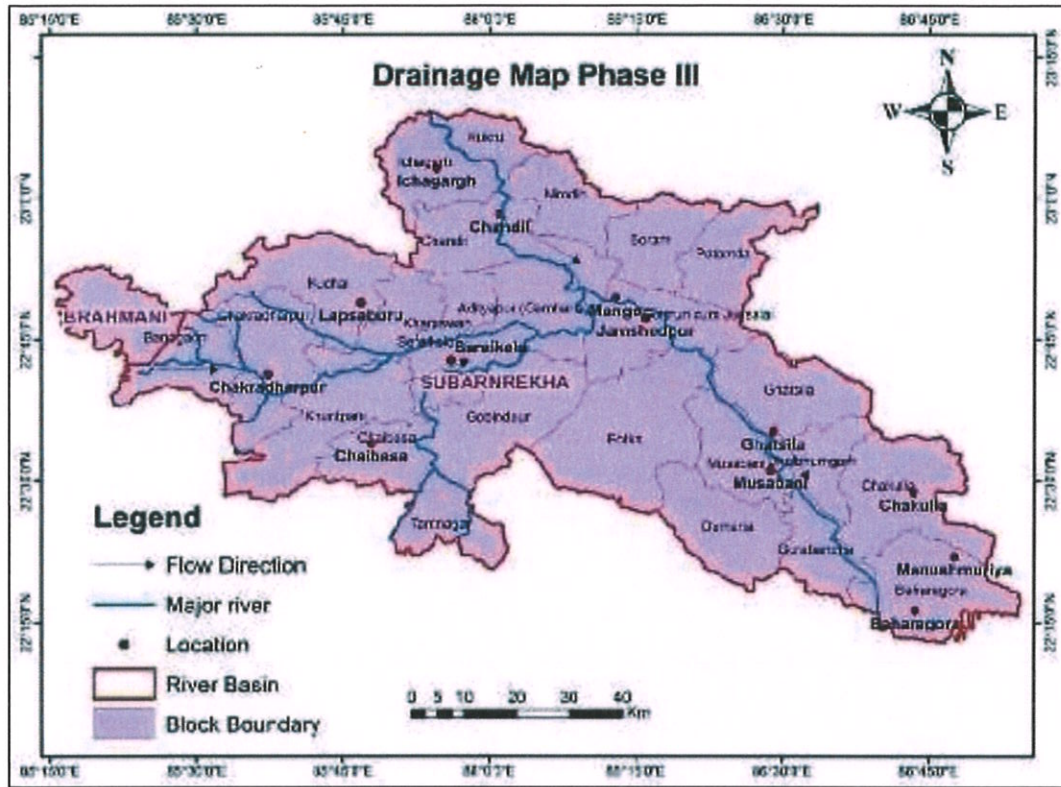
The Subarnarekha River has been controlled by strike of the rocks especially phyllites which are in contact with the Dalma lavas and the river course has followed across the anticlinal ridges. The drainage of the whole area is controlled by Subarnarekha and Kharkhai River. Kharkhai River is somewhat structurally controlled by Singhbhum Shear zone (SSZ) and helps to drain in the south west. The northern Dalma ridge is the dominant volcanic hill formed a mountain range of considerable prominence above the Tertiary plain.

Physiographic ally the district shows the dendritic drainage pattern. Here both consequent and subsequent river are found. The main river is Subarnarekha and Kharkhai showing 6th river order. District has undulating hills in south near to Singhbhum shear zone and has also flat area in the northern side. Two river basins are prominent here i.e., kharkhai and Subarnarekha. Subarnarekha River originating near Piska/Nagri in Ranchi traverses through Ranchi, Saraikela-Kharsawan and East Singhbhum district. It eventually joins the Bay of Bengal near Talsari in Bengal. Its important tributary is Kharkai River which originates in Mayurbhanj district of Odisha, flows past Rairangpur and heads north to about Seraikela and turns east to meet Subarnarekha in NW of Jamshedpur. The two other rivers of the district are Sanjay and Sona River. The river Sanjai originates in the forest clad hills of Porahat, North West of Sonua and receives Bamni a perennial stream near Ujjalnpur about 5 miles South of Gamharia Station on the South Eastern Railways. The river Sona originates in the Raisindri hill range and passes almost through the middle of Kharsawan range and finally meets the river Sanjai near Bungi in Seraikela. Apart from these rivers there are many small & large streams, which crisscross the district, draining either into the Kharkai or Subanarekha.

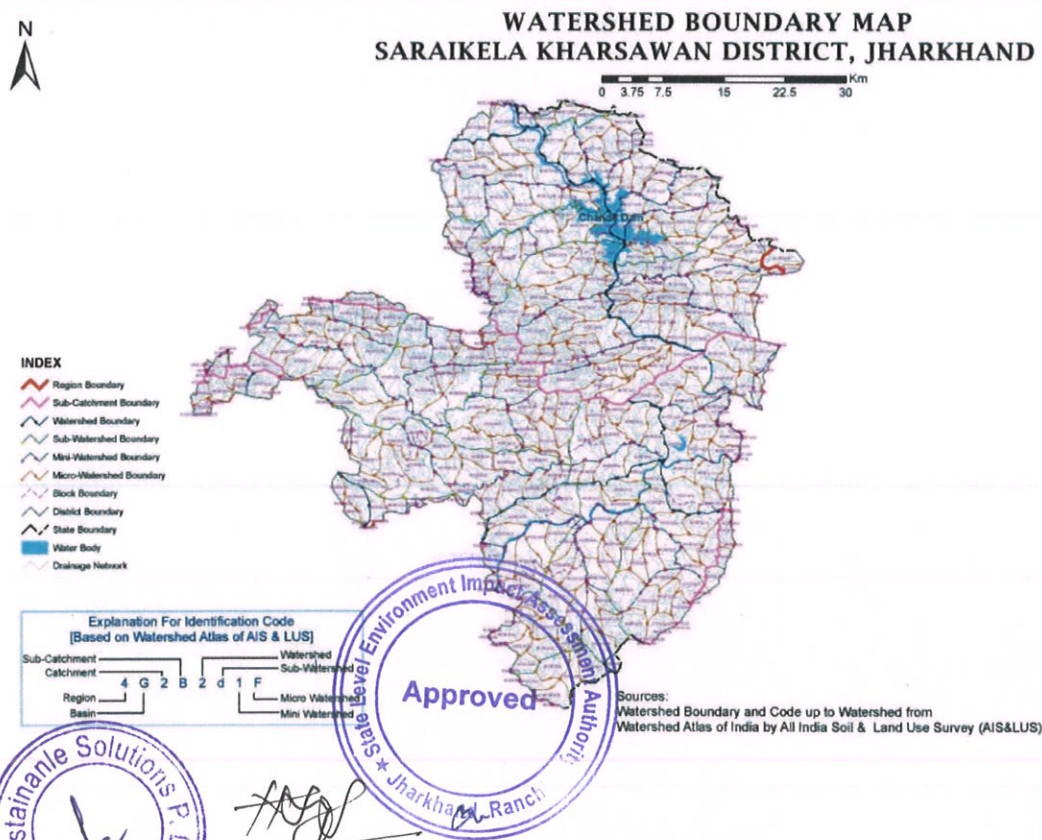
Overall, the drainage pattern on the plains is sub dendritic to dendritic, but trellis pattern is observable in the folded structures of hill ranges. Drainage density, in general, is moderate to high except in high lands where it is comparatively low. The drainage map of the district is shown



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Source: CGWB
Drainage map of district



CHAPTER- 06
**LAND UTILIZATION PATTERN IN THE DISTRICT: FOREST,
 AGRICULTURE, HORTICULTURAL, MINING ETC.**

The history of land use in the study area is supposed to be very old. Land of this region must have been utilized as per the conditions of different historical periods. In the present context, the land use of this region is influenced by the development of irrigation facilities, other agricultural infrastructures, transport networks and urbanization.

The land use statistics of Saraikela-Kharsawan district, in accordance with the nine-fold classification system maintained in the Revenue records is indicated in table 6.1

Table No. 6.1: Land use statistics (2005-2006) of Saraikela-Kharsawan district

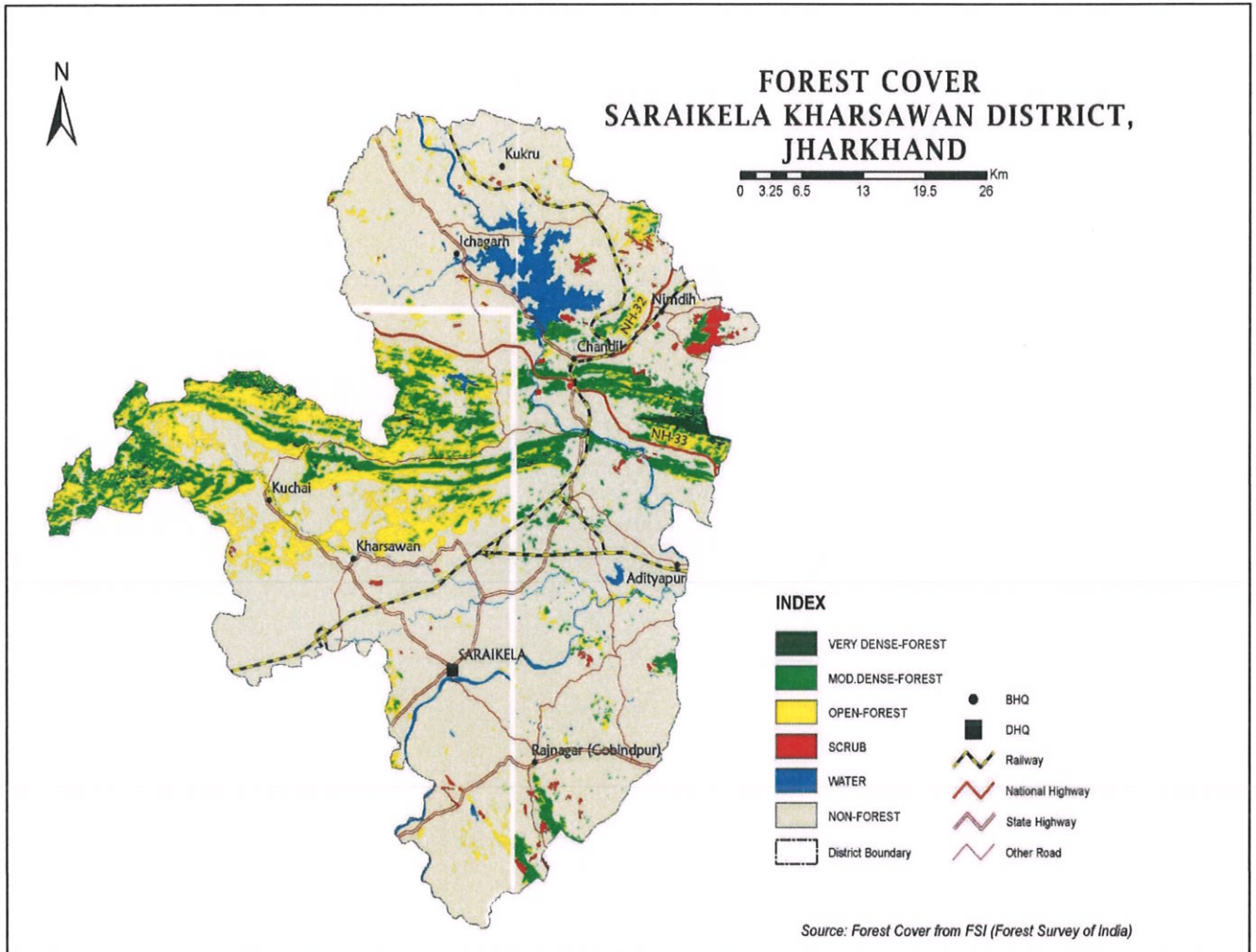
Sl. No.	Land Use	Reported area (Ha)	Area (in %)
1	Forest	69,018.22	29.09
2	Non-Agricultural land	20726.66	8.74
3	Barren and unculturable wastes	18368.34	7.74
4	Permanent pastures and grazing land	4620.50	1.95
5	Miscellaneous tree crops and groves	2631.02	1.11
6	Culturable waste	14,388.59	6.07
7	Fallows other than current fallows	22273.32	9.39
8	Current fallows	26889.05	11.33
9	Net sown area	50,917.13	21.46

Source: District statistics officer, Saraikela-Kharsawan

a) Forest detail of the area

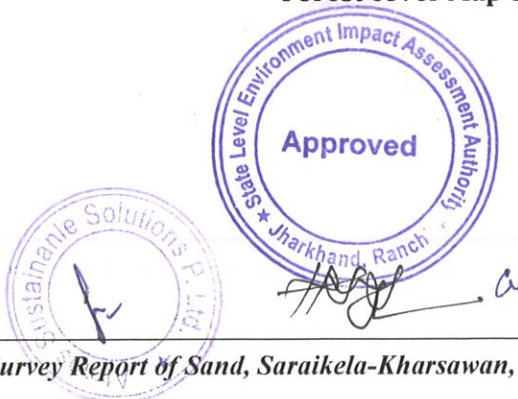
Forest covers about 30 per cent of the total area of the district, whereas the potential for agricultural land use (Net sown area + current fallows + long fallows + tree crops and groves + culturable waste) is nearly 50 per cent. Net sown area is only 21.46 per cent of the district area. Nearly 28 per cent of the area in the district with agricultural potential remained thus unutilized during 2005-2006 for one or more reasons. Barren and unculturable wastelands account for 7.74 per cent of the district area. Block-wise land utilization statistics is given in table 5.3. It shows that Chandil is a predominantly forested block with nearly 50 per cent of its area under forest. Each of Kuchai, Saraikela and Gamharia blocks has over 37 per cent of their areas under forests followed by Kharsawan (26.06%), and Neemdih (24.77%). Rajnagar and Eichagaon blocks have about 7 and 12 per cent forest areas, respectively.

Net sown areas among the blocks vary between 2.77 per cent (Chandil) and 48.42 per cent (Rajnagar). Net sown area between 33 and 36 per cent of the total areas are recorded for Kharsawan and Eichagarh blocks. Net sown areas in Saraikela and Neemdih are 3.79 and 6.49 per cent, respectively. Among others, Neemdih block recorded largest areas, both under current (22.60%) and long fallows (13.02 %). Areas under current fallows in all other blocks range from 5.58 -11.92 per cent and that under long fallows from 5.66 -12.39 per cent.



Source: Forest Cover from FSI (Forest Survey of India)

Forest cover Map of District



b) Agriculture & Irrigation

Paddy is the main crop of the district. Other major crops are Paddy, maize, Pulses and Oilseeds, other vegetables, flowers, etc. The horticulture crops are Cauliflower, cabbage, tomato, Brinjal, L. finger, cucumber etc. The cropping is mainly dependent upon rain fed irrigation. Other sources of irrigation in the district are tube wells, canals and other wells.

Season	Crop	Cropped area (ha)	% of cropped
Kharif	Paddy	8514	17
	Maize		
	Pulses		
Rabi	Wheat	2760	5
	Pulses		
	Oilseeds		

Table No. 6.2: Area distribution of Agricultural Land of Seraikela Kharsawan district (in sq. km)

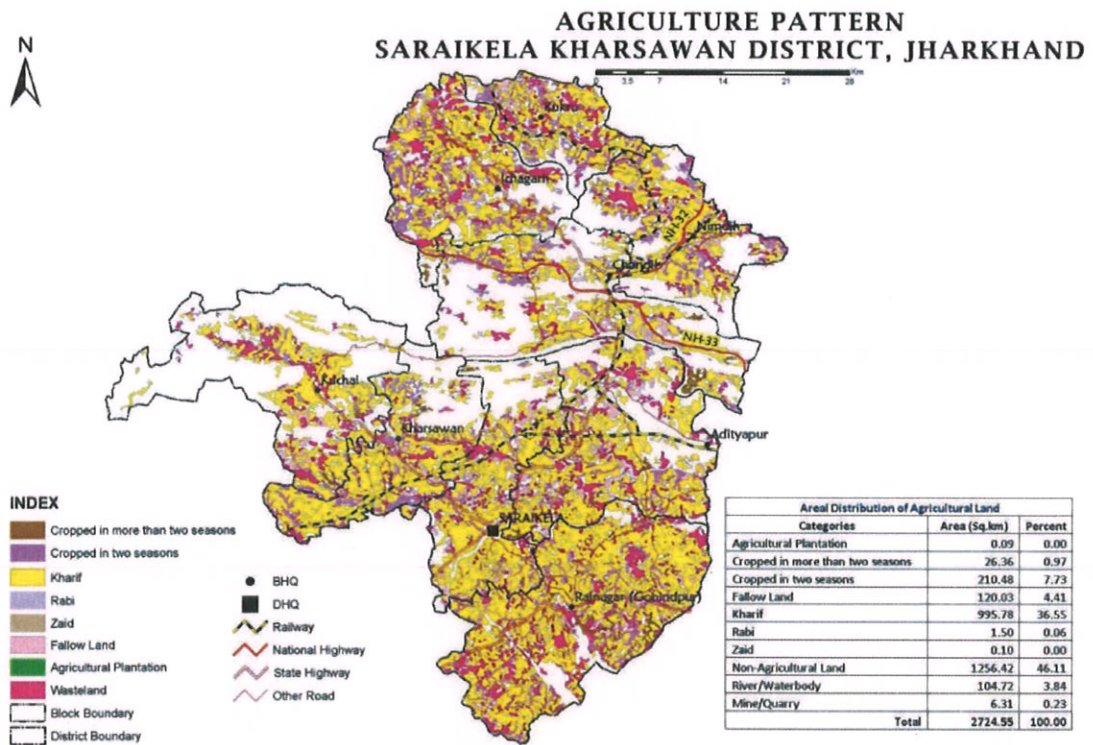
Area distribution of Agricultural Land		
Categories	Area (Sq.km)	Percentage
Agricultural Plantation	0.09	0.00
Cropped in more than two seasons	26.36	0.97
Cropped in two seasons	210.48	7.73
Fallow land	120.03	4.41
Kharif	998.78	36.55
Rabi	1.50	0.06
Zaid	0.10	0.00
Non-Agricultural Land	1256.42	46.11
River/Water body	104.72	3.84
Mine/Quarry	6.31	0.23
Total	2724.55	100.00

Table No. 6.3: Agro-Climatic/Ecological Zones of Seraikela Kharsawan district

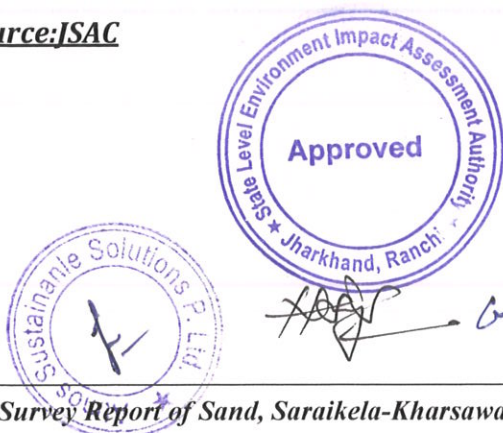
S.N.	Item	Information
Agro-Climatic/Ecological Zones		
1	Agro Ecological Sub Region (ICAR)	Eastern plateau (chotanagpur) And Eastern Ghats, Hot Subhumid Eco-Region (12.3)
2	Agro-Climatic Zone (Planning Commission)	Eastern Plateau And Hills Region (VII)
3	Agro Climatic Zone (NARP)	South Eastern Plateau Zone (BI-6)
4	List all the districts falling under the NARP Zone* (*>50% area falling in the zone)	Khunti, East singhbhum, Ranchi, Sareikela
5	Geographic coordinates of district headquarters	Latitude- 21° 51' - 23°56'N Longitude- 85° - 86°E

		Altitude- 250-1000m
6	Name and address of the concerned ZRS/ ZARS/ RARS/ RRS/ RRTTS	Zonal Research Station (ZRS), Darisai, Birsa Agricultural University, Ranchi
7	Mention the KVK located in the district with address	Krishi Vignan Kendra, Seed Multiplication Farm, Gamharia, Distt. Saraikela-Kharsawan
8	Name and address of the nearest Agromet Field Unit (AMFU, IMD) for agro-advisories in the Zone	ZRS, Darisai

Source: Agriculture Contingency Plan for District Saraikela-Kharsawan



Source:JSAC



c) Horticulture

In last two decades horticulture has emerged one of the best agricultural enterprises in state. It has two components i.e. Fruits and Vegetables.

Production and Productivity of major crops (2004-09)

Table No. 6.4: Production and Productivity of major crops (2004-09) of Saraikela-Kharsawan district

Name of Crop	Kharif		Rabi		Total	
	Production ('000 t)	Productivity (Kg/ha)	Production ('000 t)	Productivity (Kg/ha)	Production ('000 t)	Productivity (Kg/ha)
Major Horticultural crops (Crops identified based on total acreage)						
Cauliflower	36.4	0.3			36.4	0.3
Cabbage	31.8	0.3			31.8	0.3
Tomato	26.31	0.3			26.31	0.3
Brinjal	14.3	0.3			14.3	0.3
Chilli	0.5	0.1			0.5	0.1
Ladies finger	7.1	0.2			7.1	0.2
Bottle gourd	78.4	0.2			78.4	0.2
Bitter gourd	86.0	0.1			86.0	0.1
Cucumber	25.1	0.2			25.1	0.2
Ridge gourd	38.2	0.2			38.2	0.2
Sponge gourd	6.8	0.5			6.8	0.5
French Bean	15.3	0.1			15.3	0.1
Major Field crops (Crops identified based on total acreage)						
Rice	116.9	1513			116.9	1513
Maize	2.6	1290	0.6	1350	3.2	1320
Pigeonpea	1.7	500			1.7	500
Blackgram	3.5	445			3.5	445
Greengram	0.4	415			0.4	415
Wheat			1.4	1600	1.4	1600
Chick pea			0.5	1400	0.5	1400
Pea			0.2	1500	0.2	1500
Lentil			0.1	750	0.1	750

Source: Agriculture Contingency Plan for District: Saraikela-Kharsawan



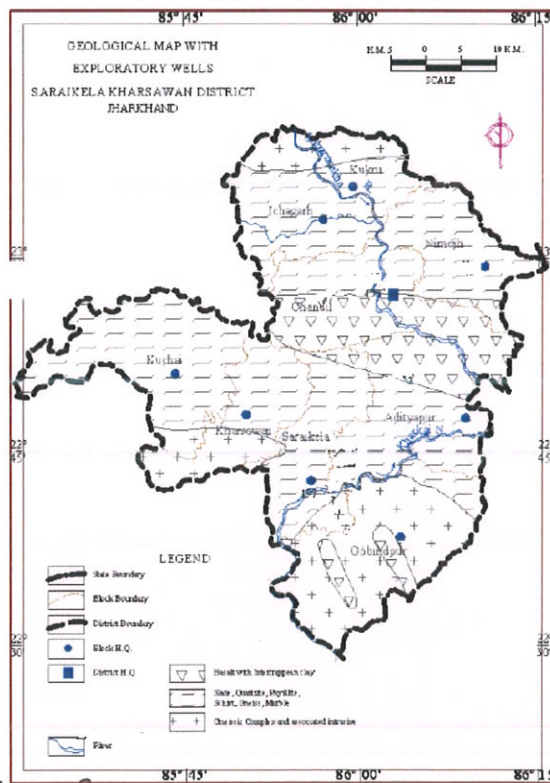
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d) Mining

Geologically Saraikela Kharsawan district lies near to the Singhbhum Shear Zone and Dalma Thrust and SSZ is the store house of mineral hence there are a number of economic and strategic minerals. Here the mining activity is involved in sand as in Jodia, Tiruldih, Seherbera etc. Quartzite as in Patahesel (Seraikela), Jaikam (Gamharia). Stone as in Lengdih (Chandil), Medki (Rajnagar). Uranium is also extracted from Mahuldih (Gamharia). Besides above minerals Saraikela Kharsawan is also rich in Kyanite, Potstone, Soapstone, Pyrophyllite, Pyroxine and Gold. Saraikela-Kharsawan is rich in minerals such as:

Major Minerals	Uranium Gold Kyanite
Minor minerals	Sand Stone Quartz Quartzite Pyroxenite Clay(Brick Kiln) Soapstone Pyrophyllite potstone



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CHAPTER- 07

SURFACE WATER AND GROUND WATER SCENARIO OF THE DISTRICT

Surface Water: The 2 major rivers are Subarnarekha and Kharkai and another 2 small rivers are Sanjay and Sona, they are perennial rivers. Apart from this a number of dams, barrages and canals have been constructed under the Subarnarekha Multipurpose Project and Shuru Jalashay Project.

The ground water occurrence and movement is basically controlled by the prevailing morphology and intensity of structural discontinuities. The intensity of joints, fractures, foliation planes are more along anticlinal or synclinal flexures. Therefore, structure is another controlling factor for occurrence and movement of ground water over the area.

The rainfall is the main source groundwater recharge in the area. The inconsistency between fracture zones is complicated in nature. The ground water therefore moves slow and find its way through the fractures and open joints. the area is underlain by unconsolidated to semi-consolidated sediments of Tertiary age which are made up of coarse sand, gravel, fine to medium sand and clay. In hard rock ares, ground water occurs within the weathered zone (10-25 m thickness) and in the underlying fractures/joints. The ground water occurs both under unconfined condition and semi confined to confined condition. The unconfined condition exists in the weathered mantle portion of the rocks. Depth of weathered mantle varies from 15-34 m in general. In Hard rock terrain fractures encountered within the depth 30-200 mbgl.

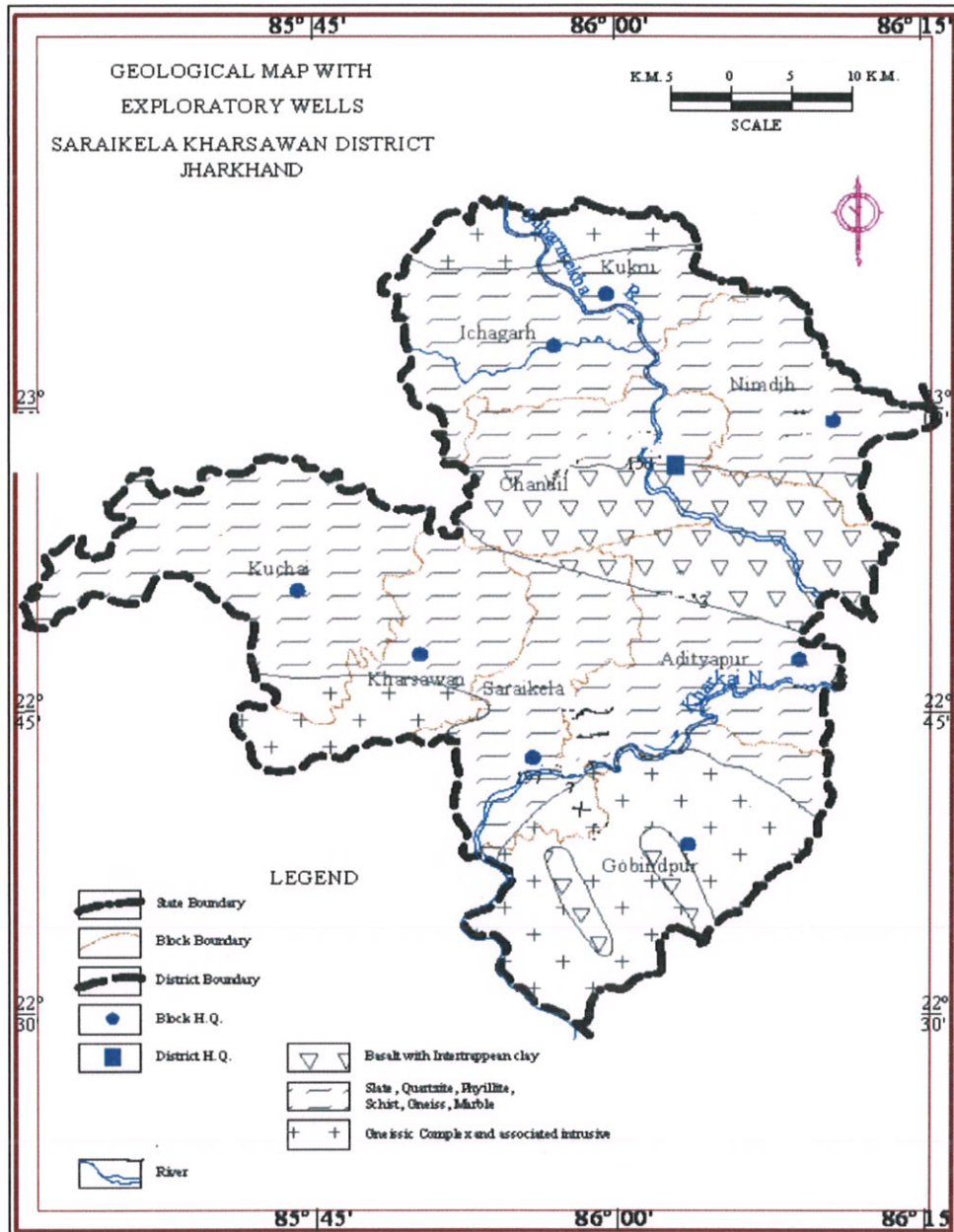
The piezometric head or water level of shallow aquifer ranges between 3.3-20 mbgl and yield ranges 0.45 to 11.5 lps. The southern part of the district is underlain by Granite-gneiss of Achaeon age forming the basement. These occur as large batholiths and are intruded by basic rocks.

In the central and northern part of the district the rocks of Barakar formation consisting of feldspathic sandstones, shales and coal seams overlying the metamorphics are exposed. In the western and northern part of the district alluvial cover of moderate thickness, caps the Archaean crystallines and the Gondwana sedimentaries. The district is underlain by diverse geological formations with complex tectonic framework.

The geological formations have been grouped under three main categories-

- The gneissic complex in the southern and the central part
- The Raimahal traps in the eastern and southeastern part
- Gondwanas overlain by thin mantle of alluvial cover in the northern and central part





Source: CGWB

Geological Map with Exploratory wells of district

Ground Water Development of District:

In the rural areas the entire water supply is dependent on ground water. Ground water development is mainly carried out in the district through dug wells and Hand pumps. In general dug wells are of 2 m diameter and the depth ranges between 8 to 15 m depending on the thickness of the weathered zone, tapping the shallow aquifer in the weathered zone and uppermost slice of the basement. Large number of dug wells used for drinking water is under private ownership for which

there is no reliable data. Over the years Mark II/ Mark III hand pumps are being drilled in large numbers for ground water development. These hand pumps have the following two major advantages i) less susceptible to contamination from surface sources and ii) tap fractures between 20-60m depth which have been found to be less affected by seasonal water level fluctuation and thus have lesser chances of failure even during extreme summer. In rural areas of Saraikela district the number of hand pumps drilled by PHED is 15541. There are 574 dug wells constructed by government departments that are under regular use.

In the urban areas ground water plays a supplementary role in water supply, the major supply being made through dams, reservoirs or weirs across rivers or streams. No authentic data is available on the number of ground water structures catering the urban water supply. As per Dynamic Ground Water Resources of India, 2013 published by Central Ground Water Board, the overall stage of ground water development in Saraikela district has been found to be 20% indicating enough scope for future development.

Depth to Water Level: -

During May 2012, the depth to water levels in HNS wells tapping shallow aquifer ranged from 5.23 to 12.20 m bgl. Depth to ground water levels during the post monsoon period (November 2012) varied between 0.89 and 5.60 m bgl. Categorization of depth to water level of pre-monsoon period (May 2012) for HNS in Saraikela district is presented below in Table 7.1. Pre-monsoon depth to water level map (May 2012) is shown in fig.-7.2.

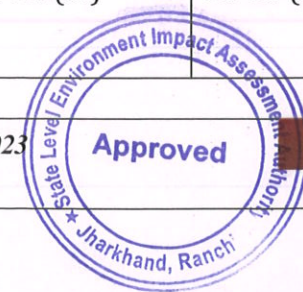
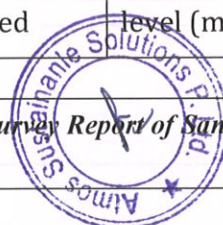
Table 7.1: Categorization of depth to water level of pre-monsoon period (May 2012)

No of wells measured	Depth to water level (m bgl)		0-2 (m)		2-5 (m)		5-10 (m)		10-20 (m)	
	Min	Max	No.	%	No.	%	No.	%	No.	%
5	5.23	12.20	0	0	0	0	4	83.33	1	16.67

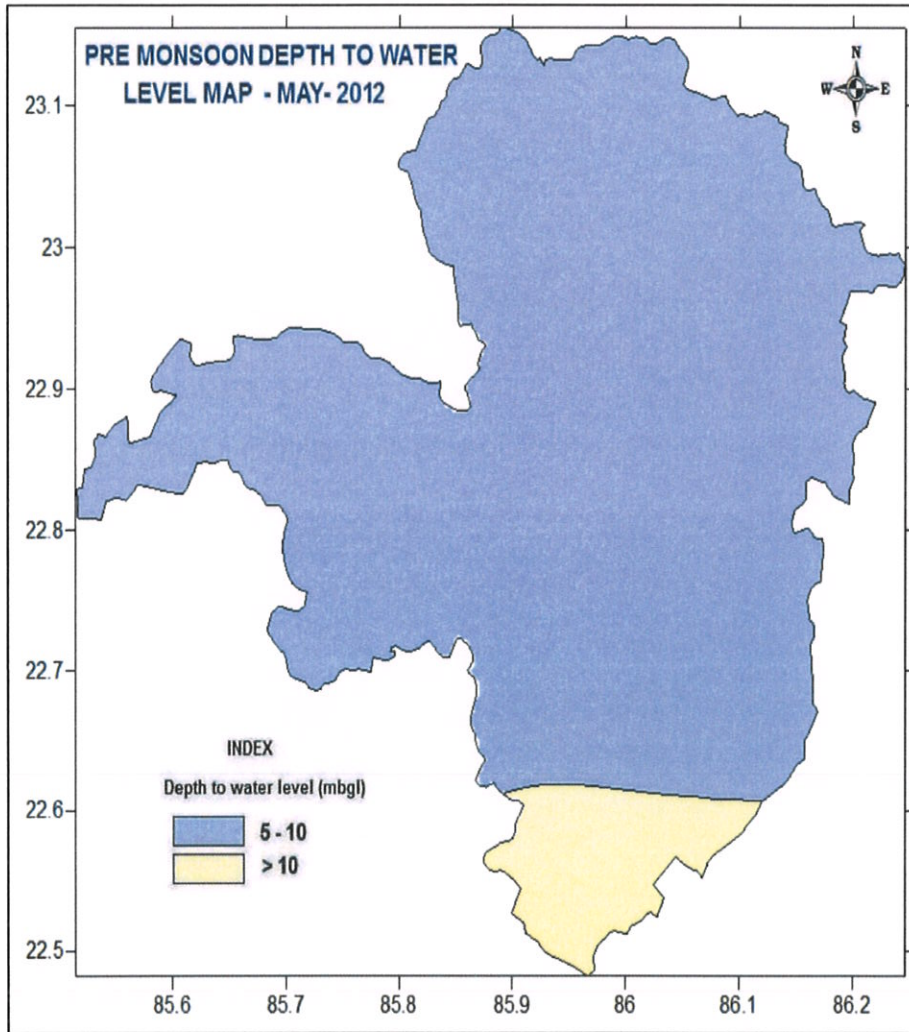
Categorization of depth to water level of post-monsoon period (November 2012) for HNS in Saraikela district is presented below in Table 7.2. Pre-monsoon depth to water level map (November 2012) is shown in fig.-7.3.

Table 7.2: Categorization of depth to water level of post-monsoon period (Nov-2012)

No of wells measured	Depth to water level (m bgl)		0-2 (m)		2-5 (m)		5-10 (m)		10-20 (m)	
	Min	Max	No.	%	No.	%	No.	%	No.	%



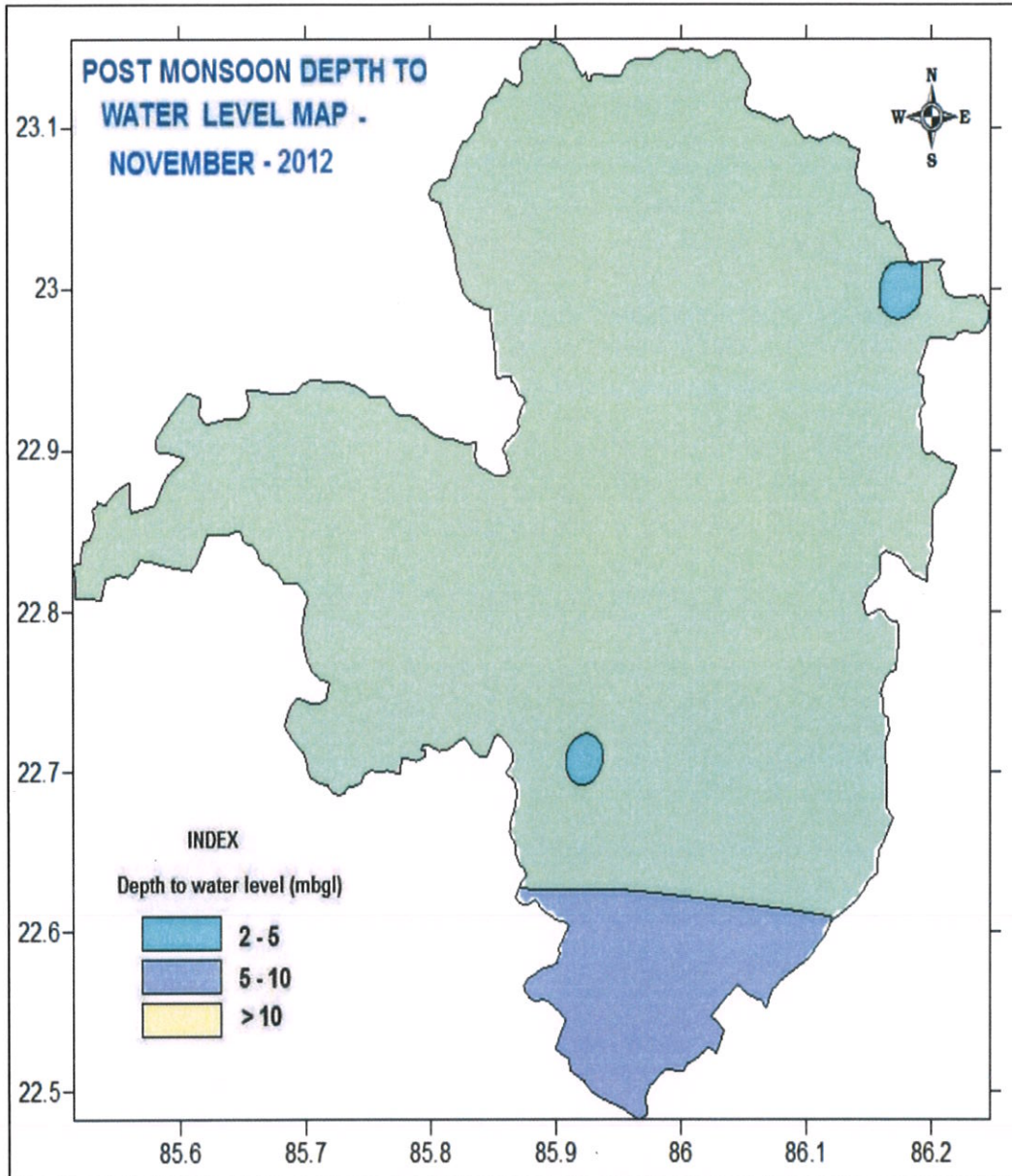
	Min	Max	No.	%	No.	%	No.	%	No.	%
7	1.6	7.10	2	29	4	57	1	14	0	0



Source: CGWB

Pre-Monsoon water level map





Source: CGWB

Post Monsoon water level map



CHAPTER- 08

RAINFALL OF THE DISTRICT AND CLIMATE CONDITION

The climate of the area is moderate to extreme and characterized by hot summer and cold winter. Rainfall in this area is also very moderate. The summer season starts from March and continued to June until rain comes and temperature ranges from 270 to 460 C. May and June are the two months when hot wind blows throughout the day. Monsoon spans from July to September with maximum rains generally in August. Normal rainfall varies from 100cm to 120cm. humidity reaches highest during monsoon, which varies between 70% to 80%, but in summer, it goes down to 25%. Winter starts at November and continues to February with its acme in January mostly. Temperature varies from 250C to 100C normally. In some day it goes down to 4-50C with a cold wave from north.

Details of rainfall data of five years (from 2016 to 2020) is furnished in Table No 8.1

Table No. 8.1: Details of rainfall data of five years (from 2016 to 2020)

YEAR	JAN		FEB		MAR		APR		MAY		JUN	
	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP
2016	9.9	-45	4.8	-77	1.4	-94	3.9	-84	93.5	82	77.2	-68
2017	0.0	-100	0.0	-100	0.0	-100	31.4	29	120.1	134	119.4	-50
2018	0.0	-100	0.0	-100	0.0	-100	142.7	487	41.6	-19	130.7	-46
2019	0.0	-100	5.6	-64	55.9	239	34.3	60	53.9	-2	126.0	-43
2020	22.9	49	8.8	-44	92.2	459	133.9	526	55.8	1	189.9	-13

JUL		AUG		SEPT		OCT		NOV		DEC	
R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP
271.7	-16	445.7	38	272.6	9	13.4	-81	0.0	-100	0.0	-100
539.3	67	304.8	-5	87.5	-65	124.1	73	2.7	-74	0.0	-100
262.9	-18	200.4	-38	131.7	-47	15.2	-79	0.0	-100	19.6	263
160.4	-48	260.6	-13	227.7	1	157.9	174	0.0	-100	16.1	209
195.2	-37	275.0	-8	72.0	-68	48.6	-16	19.8	122	0.0	-100

Source: India Meteorological Department (CRIS)



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CHAPTER- 09

THE LIST OF MINING LEASE IN THE DISTRICT WITH LOCATION, AREA AND PERIOD OF VALIDITY

Details of the mining leases in the district as per the following format:-

S. No.	Name of The Mineral	Name of the Lessee	Address & Contact No. of Lessee	Mining lease Order No. & date	Area of Mining lease (ha)	Period of Mining lease (Initial)	Period of Mining lease (Initial)	Period of Mining lease (1st/2nd...renewal)		
1	Sand	2	3	4	5	6	7	8	9	10
	Sand	JSMDC	Shri Lalit Kumar J.S.M.D.C.LTD. At Khanij Nigam Bhawan Doranda, Ranchi-834002	NA	4.90ha Khata-700 Plot No.- 2106(P)	5 Years				

Approved



Date of Commencement of Mining Operation	Status (Working/Non-Working/Temp. Working for dispatch etc.)	Captive/ Non- Captive	Obtained Environmental Clearance (Yes/No), If Yes Letter No with date of grant of EC.	Location of the Mining lease (Latitude & Longitude)	Method of Mining (Opencast/Underground)
11	12	13	14	15	16
NA	Working	Non Captive	EC/SEIAA/2018-19/2128/2018/257, Ranchi, Date-05.06.2019	23 07 37.61"N to 85 54'41.93	Open Cast

Total Mineral Reserve available in the district:

S. No.	Name of The Mineral	Name of the Lessee	Address & Contact No. of Lessee	Letter of Intent Grant Order No. & date	Area of Mining lease to be allotted	Validity of LoI	Use (Captive/ Non-Captive)	Location of the Mining lease (Latitude & Longitude)
1	2	3	4	5	6	7	8	9
NA	NA	NA	NA	NA	NA	NA	NA	NA



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CHAPTER- 10
DETAILS OF ROYALTY OR REVENUE RECEIVED IN LAST THREE YEARS

S.NO	YEARS	ROYALTY/REVENUE (IN LAKHS RS.)
01	2021-2022	7.10
02	2020-2021	2.83
03	2019-2020	2.13
TOTALS		12.06

- **Source:** Data received from DMO Saraikela-Kharsawa



CHAPTER- 11
DETAILS OF PRODUCTION OF SAND OR BAJRI OR MINOR MINERALS IN
LAST FIVE YEARS

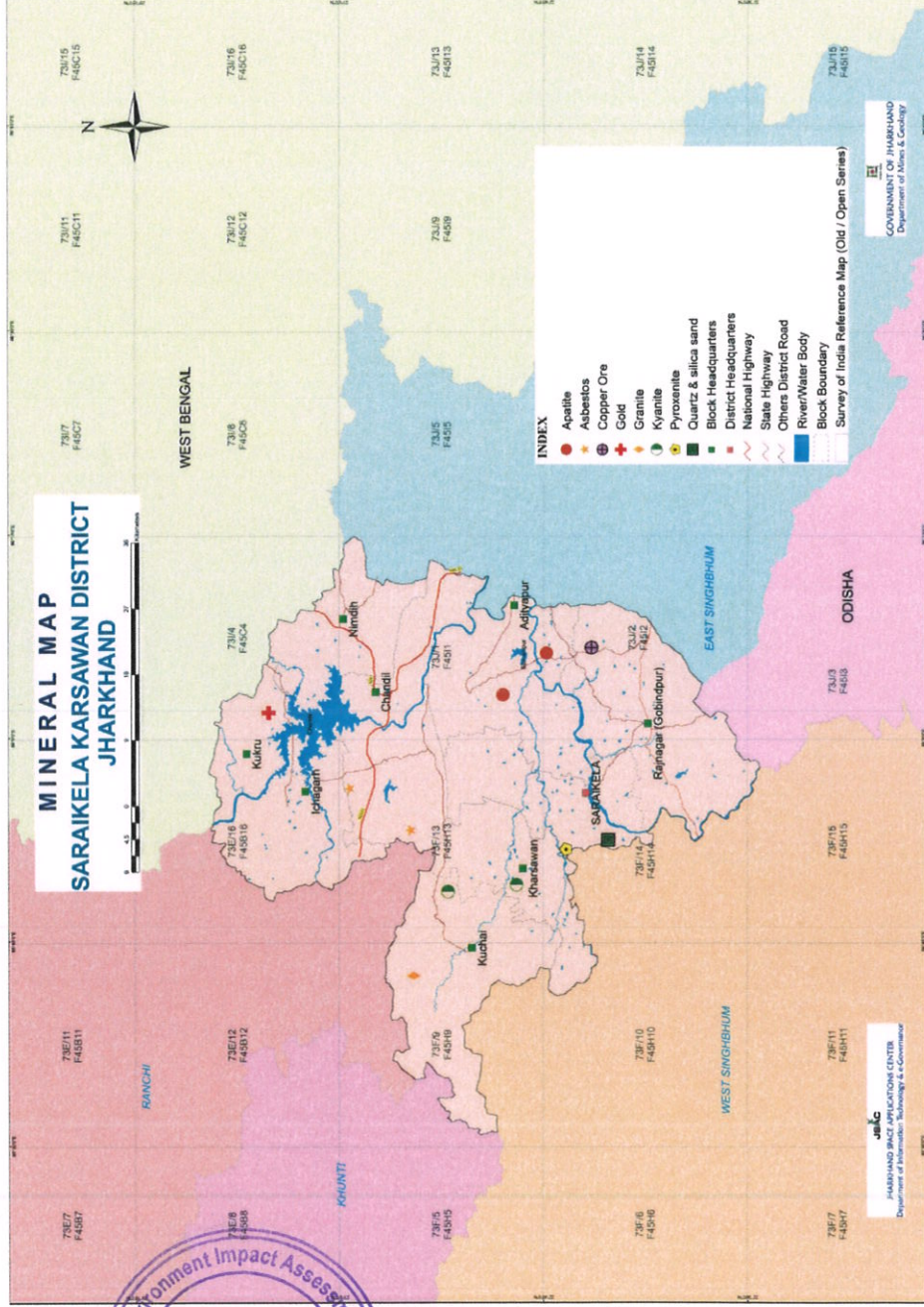
S.NO	YEARS	PRODUCTION OF SAND IN CFT
01	2022-2023(Upto Feb- 2023)	850850.00
02	2021-2022	1159800.00
03	2020-2021	2016344.00
04	2019-2020	698475.00
05	2018-2019	4777459.810
06	2017-2018	7888558.350
TOTALS		17391487.16

- **Source:** Data received from DMO Saraikela-Kharsawa



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CHAPTER- 12 MINERAL MAP OF THE DISTRICT



Approved
State Level Environment Impact Assessment Authority
Jharkhand, Ranchi

Amos Sustainable Solutions P. Ltd.

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Source: Govt. of Jharkhand "Department of Mines & Geology"

Mineral Map of Saraikela-Karsawan district Jharkhand

CHAPTER- 13

LIST OF LETTERS OF INTENT HOLDERS(LOI) IN THE DISTRICT WITH ITS VALIDITY



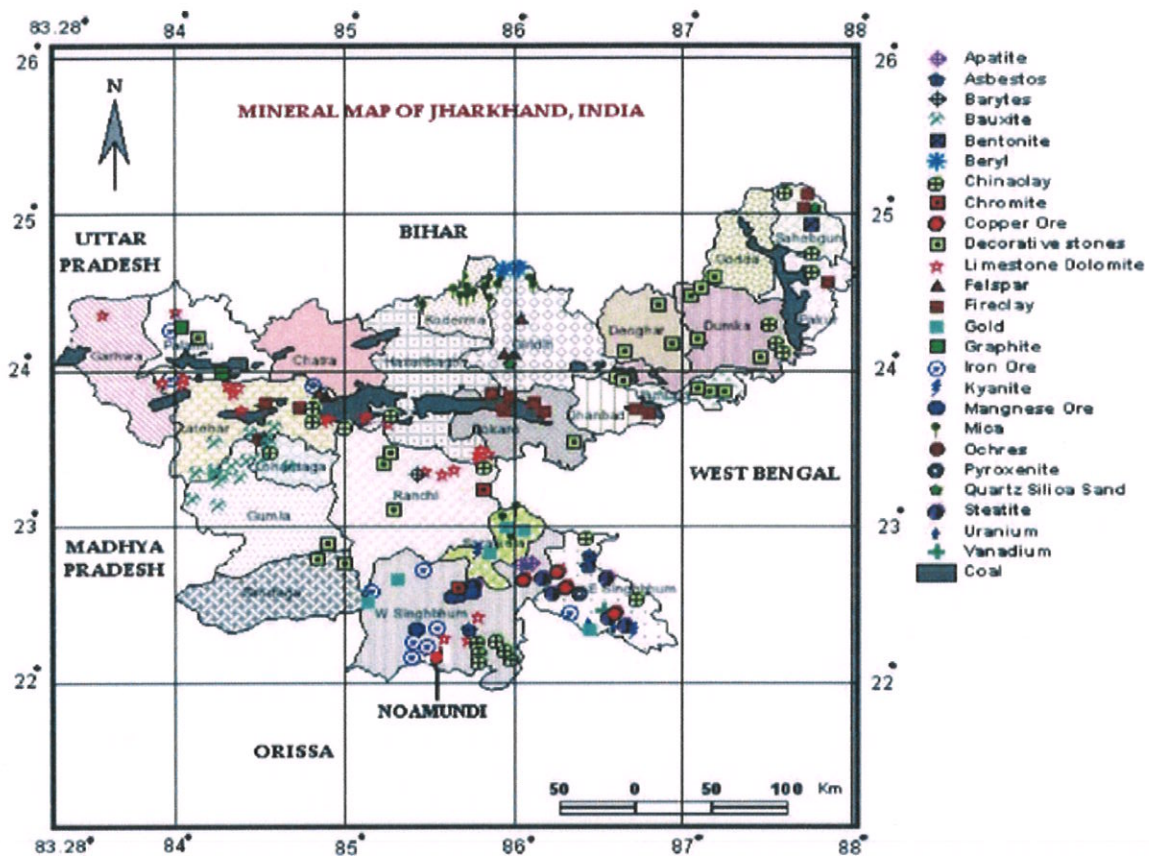
S. No.	Name of The Mineral	Name of the Lessee	Address & Contact No. of LOI Holder	Letter Intent Order No. & Date	Area of Mining Lease to be allotted (ha)	Validity of LOI	Use (Captive/ Non-Captive)	Location of the Mining Lease (Latitude & Longitude)
	Sand	2	3	4	5	6	7	8
1	NA	NA	NA	NA	NA	NA	NA	NA
2								

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• Letter of intent not issued at this time and last years.



CHAPTER- 14
TOTAL MINERAL RESERVE AVAILABLE IN THE DISTRICT



Source: researchgate.net



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CHAPTER- 15 QUALITY/GRADE OF MINERAL AVAILABLE IN THE DISTRICT

Jharkhand is located in the eastern part of India. Jharkhand is rich in mineral resources such as coal (27.3 per cent of India's reserves), iron ore (26 per cent of India's reserves), copper ore (18.5 per cent of India's reserves), uranium, mica, bauxite, granite, limestone, silver, graphite, magnetite and dolomite. However, presences of important minerals are yet to be explored in the district. The main mineral resources found in the district are stone chips and river sands. Despite having potential natural resources and various raw materials for small, medium and major industries the sector very much under developed in Saraikela-Kharsawan district.

The Saraikela-Kharsawan district has large deposits of minerals like Kyanite, Asbestos, quartz, Copper, Pyroxenite, Silica Sand, Building Stone, River bed Sand. Brick kiln, etc. and other valuable minerals.

* Kyanite occurs in Jharkhand in East Singhbhum and Kharsawan- Saraikela districts and its reserve in this region is 0.90 MT. It occurs either in massive form or as Quartz-Kyanite rock.

Source: JSMDC



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CHAPTER- 16 USE OF MINERALS

Gitti/ building stone: Aggregates – stone used for its strong physical properties – crushed and sorted into various sizes for use in concrete, coated with bitumen to make asphalt or used 'dry' as bulk fill in construction. Mostly used in roads, concrete and building products.

Murum: Murum is mostly used for construction purposes. Generally, it is deep brown or red in color. Moorum is used in plinth filling, road pavements, backfilling in trenches, footing pits etc. It is a suitable type of soil in the construction field, since it does not contain any organic matters and can be compacted easily forming hard surfaces.

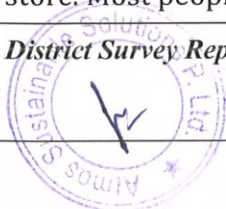
Ordinary Clay: Clay is used for making pottery, both utilitarian and decorative, and construction products, such as bricks, wall and floor tiles. Different types of **clay**, when used with different minerals and firing conditions, are used to produce earthenware, stoneware, and porcelain.

Ordinary sand: Sand is not for manufacturing concrete, but it is the ideal material for asphalt mix. It is commonly used to fix and level roads, and lay bedding for a variety of uses. This is in contrast with our three other main construction sand products, which are mainly used for building applications.

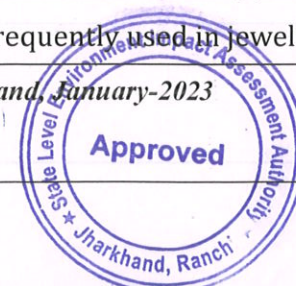
Quartz and Quartzite: The strong quartz hardness makes it more difficult than most other natural substances. It is therefore an excellent abrasive material. Used for sand blasting, scouring cleaners, grinding media, and grit for sanding and sawing, quartz sands and finely ground silica sand. In the manufacture of rubber, paint, and putty, quartz sand is used as filler. Carefully screened and cleaned quartz grains are used as filter media and granules for roofing. In the railroad and mining industries, quartz sands are used for traction. Quartzite is a decorative stone and may be used to cover walls, as roofing tiles, as flooring, and stairsteps. Its use for countertops in kitchens is expanding rapidly. It is harder and more resistant to stains than granite. Crushed quartzite is sometimes used in road construction

Shale: It has many commercial uses. It is a source material in the ceramics industry to make brick, tile, and pottery. Shale used to make pottery and building materials requires little processing besides crushing and mixing with water. Shale is crushed and heated with limestone to make cement for the construction industry.

Kyanite: Kyanite is a gemstone that you will rarely encounter in the typical jewelry store. Most people have not heard of kyanite, as it is infrequently used in jewelry. It is an



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"exotic" gem. Perhaps that is what makes it so interesting?

If you are interested in kyanite as a gemstone or in jewelry, the best place to find it is in artisan jewelry stores or in jewelry stores that are associated with a mineral dealer. The people who own these businesses are likely to be interested in kyanite and incorporate it into their product line.

High-quality and nicely colored kyanite can be cut into attractive and desirable cabochons and faceted stones. These are often used in rings, earrings, pendants, and other jewelry. Kyanite is also used to make beads. These beads often have a flat geometry because the mineral typically occurs in thin blades.

Pyroxinite:

- Countertops, Decorative Aggregates, Interior Decoration, Kitchens
- As Building Stone, As Facing Stone
- Curbing
- As Dimension Stone, Building houses or walls, Cement Manufacture, Construction Aggregate, for Road Aggregate
- Cemetery Markers, Commemorative Tablets, Laboratory bench tops, Jewelry, Sea Defence, Tombstones

Copper: The primary applications of copper are in electrical wiring, roofing, plumbing, and industrial machinery. For most of these applications, copper is used in its pure form. However, it can be alloyed with other metals when increased levels of hardness are required. Copper wires are known to be used in power generation, power distribution, power transmission, and electronic circuits. In fact, more than half of all mined copper is used in electrical wiring.



CHAPTER- 17
DEMAND AND SUPPLY OF THE MINERAL IN THE LAST FIVE YEARS

River sand is used as raw material in construction of building and infrastructure project, the demand of sand is increasing day by day. The requirement for the mineral is always high in the nearby cities and towns. Therefore there is always a good demand of the mineral in the domestic market. Its demand in industrial area of Saraikela-Kharsawa and nearby areas is increasing very fast. During last five in Financial Year(F.Y)-2017-2018-**7888558.350cft**, F.Y-2018-2019-**4777459.810cft**, F.Y-2019-2020-**698475.00cft**, F.Y-2020-2021-**2016344.00cft** and F.Y 2021-2022-**1159800.00cft**
To fulfill the demand in the district, the sand ghats proposed for production of sand.

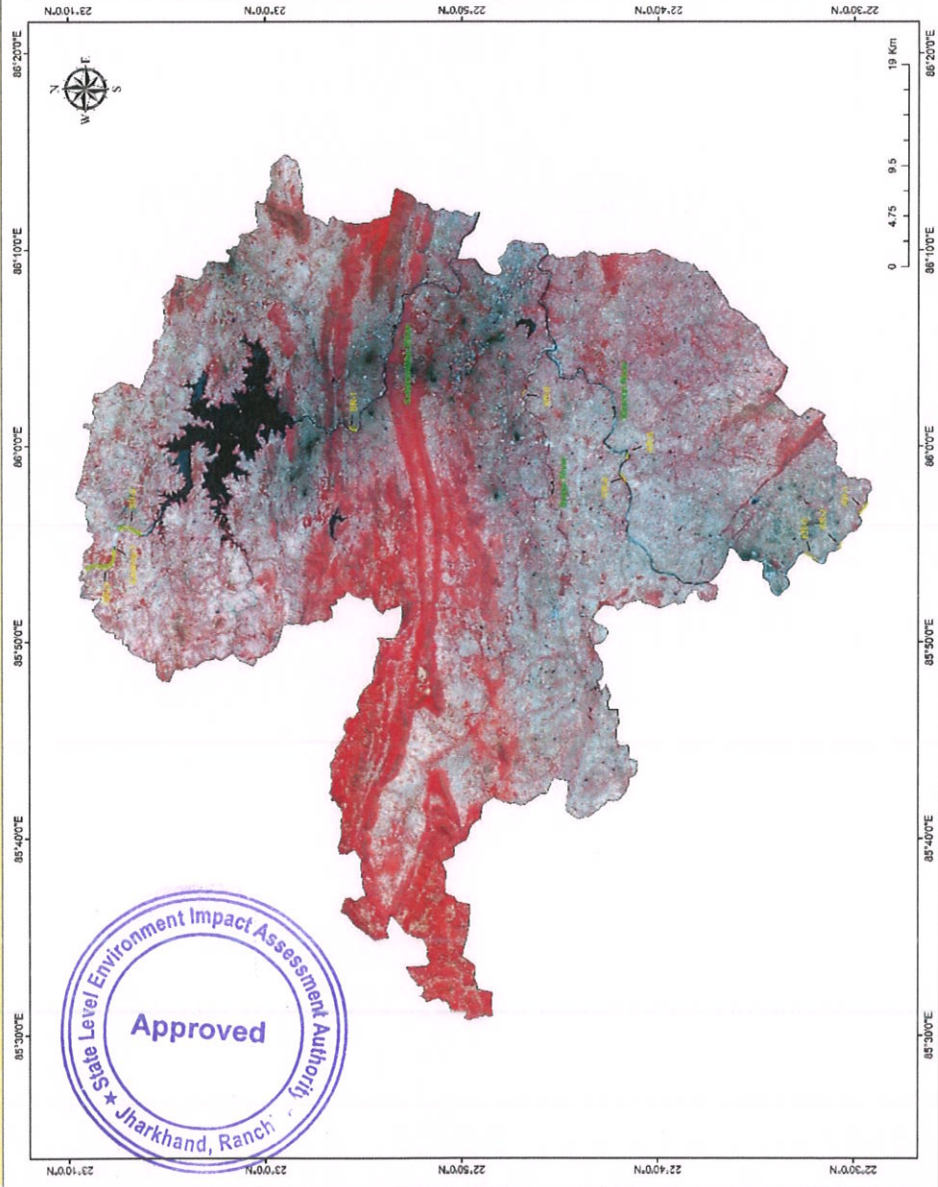


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CHAPTER- 18
MINING LEASES MARKED ON THE MAP OF THE DISTRICT

SARAIKELA-KHARSAWA DISTRICT JHARKHAND STATE

False Colour Composite Map (FCC)
Pre: Monsoon
Landat: 8 Data acquired on 26/04/2022



UIN	Area in Hectare (Hs)
1) KR-1	18.60
2) KR-2	3.68
3) KR-3	10.00
4) KR-4	8.10
5) KR-5	5.70
6) KR-6	2.08
7) SR-1	12.91
8) SR-2	48.90
9) SR-3	76.77

Legend

- Shrub Area
- Waterbody
- Kharkai River and Subarnrekhal River and Sanjati River
- District Boundary
- Potential area of Sand
- Existing Sand Ghats
- River Flow Direction

Source:
Satellite Image Landsat
USGS Earth Explorer



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CHAPTER- 19
RECOMMENDATION OF ENFORCEMENT & MONITORING GUIDELINES FOR
SAND MINING BY MOEF & CC-2020

INTRODUCTION

India is developing at a faster pace and much technological advancement has already been taken place in the surveillance and remote monitoring in the field of mining. Thus, it is prudent to utilize the technological advancement for the effective monitoring of the mining activities particularly sand mining in the country.

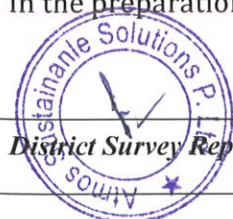
Following a series of orders by the National Green Tribunal in 2018, the Ministry of Environment, Forests and Climate Change has for the first time released guidelines to monitor and check illegal sand mining in the country. The Enforcement and Monitoring (EM) Guidelines for Sand Mining 2020 released by the Ministry include directions to states to carry out river audits, put detailed survey reports of all mining areas online and in the public domain, conduct replenishment studies of river beds, constantly monitor mining with drones, aerial surveys, ground surveys and set up dedicated task forces at district levels. The guidelines also push for online sales and purchase of sand and other riverbed materials to make the process transparent. They propose night surveillance of mining activity through night-vision drones.

While the MoEF&CC has already put in place the Sustainable Sand Management Guidelines 2016, which focus on the management of sand mining in India, that there is an urgent need to have guidelines for effective enforcement of regulatory provisions and their monitoring.

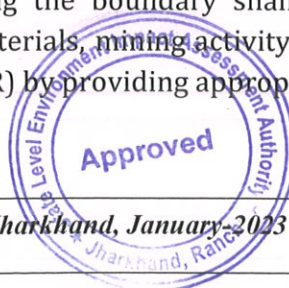
BACKGROUND

The Mines and Minerals (Development and Regulation) Act, 1957 has empowered state governments to make rules to prevent illegal mining, transportation and storage of minerals. "But in the recent past, it has been observed that there were a large number of illegal mining cases in the country and in some cases, many of the officers lost their lives while executing their duties to curb illegal mining. Illegal and uncontrolled illegal mining leads to loss of revenue to the State and degradation of the environment. The enforcement guidelines focus on the "effective monitoring of sand mining from the identification of sand mineral sources to its dispatch and end-use by consumers and the general public and looks at a uniform protocol for the whole country".

The need for replenishment study for river bed sand is also required in order to "nullify the adverse impacts arising due to excessive sand extraction". No riverbed mining will be allowed during the monsoon. In cases where rivers become district boundaries or state boundaries, the districts or states sharing the boundary shall constitute the combined task force for monitoring of mined materials, mining activity and participate in the preparation of District Survey Reports (DSR) by providing appropriate inputs.



ASD cc



The guidelines say the detailed survey needs to be carried out for quantification of minerals and the demand and supply of the riverbed material through market survey, including the future demand for the next five years.

The guidelines also push for the sale and purchase of sand and river bed material (RBM) online to make the process more transparent. "In order to curb illegal mining, it is very necessary that the general public is aware of the legal source of sand and RBM suppliers. It is suggested that the state government should develop an online portal for sale and purchase of sand and RBM. The state government will also decide the model of sale and the price of RBM. "It is suggested that the controlled price model is more effective in controlling illegal sand mining," the guidelines state.

This document will serve as a guideline for collection of critical information for enforcement of the regulatory provision(s) and also highlights the essential infrastructural requirements necessary for effective monitoring for Sustainable Sand Mining. The document is prepared in consideration of various orders/directions issued by Hon'ble NGT in matters pertaining to illegal sand mining and also based on the reports submitted by expert committees and investigation teams.

Further, this document is supplemental to the existing "Sustainable Sand Mining Management Guideline-2016" (SSMG-2016), and these two guidelines viz. "Enforcement & Monitoring Guidelines for Sand Mining" (EMGSM-2020) and SSMG-2016 shall be read and implemented in sync with each other. In case, any ambiguity or variation between the provisions of both these document arises, the provision made in "Enforcement & Monitoring Guidelines for Sand Mining-2020 "shall prevail.

OBJECTIVES OF GUIDELINE:

- Identification and Quantification of Mineral Resource and its optimal utilization.
- To regulate the Sand & Gravel Mining in the Country since its identification to its final end-use by the consumers and the general public.
- Use of IT-enabled services & latest technologies for surveillance of the sand mining at each step.
- Reduction in demand & supply gaps.
- Setting up the procedure for replenishment study of Sand.
- Post Environmental Clearance Monitoring.
- Procedure for Environmental Audit.
- To control the instance of illegal mining



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SLIENT FEATURE OF THE GUIDELINE:

- District Survey Report: The guidelines provide the procedure to be followed for identifying areas where mining can be allowed or prohibited. It provides guidelines for preparing a district survey report, which includes: Preparing a report before granting a mining lease, and Defining mining and no mining zones based on certain environmental and social factors.
- Preventing Illegal Mining: The guidelines suggest that sites can be monitored remotely by using unmanned artificial vehicles or drones. Drones can also be used for quantity estimation and land use monitoring. Further, the guidelines propose night surveillance of mining activity through night-vision drones. The environmental damages incurred due to illegal mining will be assessed by a committee constituted by the District Administration.
- Environmental Clearance: Environmental Clearance for mining is given by regulatory authorities after considering the potential environmental impact. However, it has been observed that often the Letter of Intent (LoI) is granted for a location which is not feasible. for environment-friendly mining. The guidelines provide that LoIs should be granted for those locations which have the least possibility of an impact on the environment and nearby habitation.

The guidelines also push for online sales and purchase of sand and other riverbed materials to make the process transparent.

There are some important key points of EM guidelines for sand mining 2020:

a) Source to Destination Monitoring:

- The new set of guidelines focuses on the effective monitoring of sand mining from the identification of sand mineral sources to its dispatch and end-use by consumers and the general public and look at a uniform protocol for the whole country.
- Constantly monitor mining with drones and night surveillance of mining activity through night-vision drones.

b) Audits:

- States to carry out river audits put detailed survey reports of all mining areas in the public domain.

c) Enforcement:

- It gives directions to states to set up dedicated task forces at district levels.
- In cases where rivers become district boundaries or state boundaries, the districts or states sharing the boundary shall constitute the combined task force for monitoring of mined materials, mining activity and participate in the preparation of District Survey Reports (DSR) by providing appropriate inputs.

d) Sustainability:

- Conduct replenishment study for river bed sand in order to nullify the adverse impacts arising due to excessive sand extraction.



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- No riverbed mining will be allowed during the monsoon.

Requirement for Monitoring & Enforcement

Sustainable Sand Mining Management Guidelines (SSMMG) 2016 and past experience suggest that the sources of sand in India are through:

- River (riverbed and flood plain),
- Lakes and reservoirs,
- Agricultural fields,
- Coastal / marine sand,
- Palaeo-channels and
- Manufactured Sand (M-Sand).

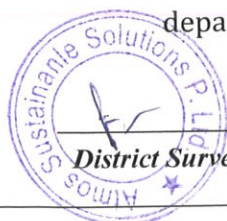
PREPARATION OF DISTRICT SURVEY REPORT:

“Sustainable Sand Mining Guidelines, 2016” issued by MoEF&CC requires preparation of District Survey Report (DSR), which is an important initial step before grant of mining lease/LoI. The guidelines emphasize detailed procedure to be followed for the purpose of identification of areas of aggradation/ deposition where mining can be allowed and identification of areas of erosion and proximity to infrastructural structures and installation where mining should be prohibited. Calculation of annual rate of replenishment, allowing time for replenishment after mining, identification of ways of scientific and systematic mining; identifying measures for protection of environment and ecology and determining measures for protection of bank erosion, benchmark (BM) with respect to mean Sea Level (MSL) should be made essential in mining channel reaches (MCR) below which no mining shall be allowed.

Therefore, preparation of District Survey Report is a very important step and sustainable sand mining in any part of the country will depend on the quality of District Survey Report.

Considering the importance of district survey report, the Ministry of Environment Forest and climate change, after consultation with experts dealing with mining-related matters, formulated the following guidelines for the preparation of comprehensive District Survey Report for sand mining.

- 1) District Survey Report for sand mining shall be prepared before the auction/e-auction/grant of the mining lease/Letter of Intent (LoI) by Mining department or department dealing the mining activity in respective state.



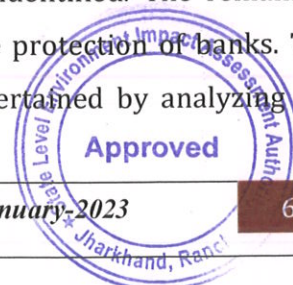
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- 2) The first step is to develop the inventory of the River Bed Material and Other sand sources in the district. In order to make the inventory of River Bed Material, a detailed survey of the district needs to be carried out, to identify the source of River Bed Material and alternative source of sand (M-Sand). The source will include rivers, de-siltation of reservoir/dams, Patta lands/Khatedari Land, M-sand etc.
- 3) District Survey Report is to be prepared in such a way that it not only identifies the mineral-bearing area but also define the mining and no mining zones considering various environmental and social factors.
- 4) Identification of the source of Sand & M-Sand. The sources may be from Rivers, Lakes, Ponds, Dams, De-silting locations, Patta land/Khtedari lands. The details in case of Rivers such as [name, length of river, type (Perennial or Non-Perennial), Villages, Tehsil, District], in case of Lakes, Ponds, Dams, De-silting locations [Name, owned/maintained by (State Govt./PSU), area, Villages, Tehsil, District] in case of Patta land/Khtedari lands [Owner Name, Sy No, Area, Agricultural/Non-Agricultural, Villages, Tehsil, District], in case of M-Sand Plant [Owner Name, Sy No, Area, Quantity/Annum, Villages, Tehsil, District], needs to be recorded as per format given in Annexure-I.
- 5) Defining the sources of Sand/M-Sand in the district is the next step for identification of the potential area of deposition/aggradation wherein mining lease could be granted. Detailed survey needs to be carried out for quantification of minerals. The purpose of mining in the river bed is for channelization of rivers so as to avoid the possibility of flooding and to maintain the flow of the rivers. For this, the entire river stretch needs to be surveyed and original ground level (OGL) to be recorded and area of aggradation/deposition needs to be ascertained by comparing the level difference between the outside riverbed OGL and water level. Once the area of aggradation/deposition is identified, then the quantity of River Bed Material available needs to be calculated. The next step is channelization of the river bed and for this central $\frac{3}{4}$ th part of the river; width needs to be identified on a map. Out of the $\frac{3}{4}$ th part area, where there is a deposition/aggradation of the material needs to be identified. The remaining $\frac{1}{4}$ th area needs to be kept as no mining zone for the protection of banks. The specific gravity of the material also needs to be ascertained by analyzing the

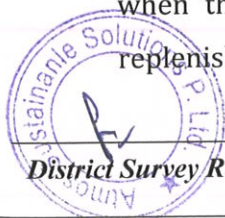


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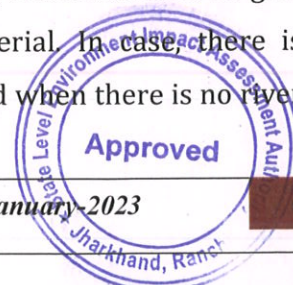


sample from a NABL accredited lab. Thus, the quantity of material available in metric ton needs to be calculated for mining and no mining zone.

- 6) The permanent boundary pillars need to be erected after identification of an area of aggradation and deposition outside the bank of the river at a safe location for future surveying. The distance between boundary pillars on each side of the bank shall not be more than 100 meters.
- 7) Identifying the mining and no mining zone shall follow with defining the area of sensitivity by ascertaining the distance of the mining area from the protected area, forest, bridges, important structures, habitation etc. and based on the sensitivity the area needs to be defined in sensitive and non-sensitive area.
- 8) Demand and supply of the Riverbed Material through market survey needs to be carried out. In addition to this future demand for the next 5 years also needs to be considered.
- 9) It is suggested that as far as possible the sensitive areas should be avoided for mining, unless local safety condition arises. Such deviation shall be temporary & shall not be a permanent feature.
- 10) The final area selected for the mining should be then divided into mining lease as per the requirement of State Government. It is suggested the mining lease area should be so selected as to cover the entire deposition area. Dividing a large area of deposition/aggradation into smaller mining leases should be avoided as it leads to loss of mineral and indirectly promote illegal mining.
- 11) Cluster situation shall be examined. A cluster is formed when one mining lease of homogenous mineral is within 500 meters of the other mining lease. In order to reduce the cluster formation mining lease size should be defined in such a way that distance between any two clusters preferably should not be less than 2.5 Km. Mining lease should be defined in such a way that the total area of the mining leases in a cluster should not be more than 10 Ha.
- 12) The number of a contiguous cluster needs to be ascertained. Contiguous cluster is formed when one cluster is at a distance of 2.5 Km from the other cluster.
- 13) The mining outside the riverbed on Patta land/Khatedari land be granted when there is possibility of replenishment of material. In case, there is no replenishment then mining lease shall only be granted when there is no riverbed

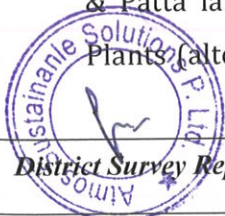


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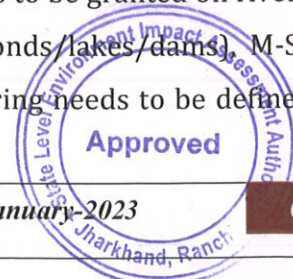


mining possibility within 5 KM of the Patta land/Khatedari land. For government projects, mining could be allowed on Patta land/Khatedari land but the mining should only be done by the Government agency and material should not be used for sale in the open market. Cluster situation as mentioned in para k above is also applicable for the mining in Patta land/Khatedari land.

- 14)** The State Government should define the transportation route from the mining lease considering the maximum production from the mines as at this stage the size of mining leases, their location, the quantity of mineral that can be mined safely etc. is available with the State Government. It is suggested that the transportation route should be selected in such a way that the movement of trucks/tippers/tractors from the villages having habitation should be avoided. The transportation route so selected should be verified by the State Government for its carrying capacity.
- 15)** Potential site for mining having its impact on the forest, protected area, habitation, bridges etc, shall be avoided. For this, a sub-divisional committee may be formed which after the site visit shall decide its suitability for mining. The list of mining lease after the recommendation of the Committee needs to be defined in the following format given in as Annexure-II. The Sub-Divisional Committee after the site visit shall make a recommendation on the site for its suitability of mining and also records the reason for selecting the mining lease in the Patta land. The details regarding cluster and contiguous cluster needs to be provided as in Annexure-III. The details of the transportation need to be provided as in Annexure IV.
- 16)** Public consultation-The Comments of the various stakeholders may be sought on the list of mining lease to be auctioned. The State Government shall give an advertisement in the local and national newspaper for seeking comments of the general public on the list of mining lease included in the DSR. The DSR should be placed in the public domain for at least one month from the date of publication of the advertisement for obtaining comments of the general public. The comments so received shall be placed before the sub-divisional committee for active consideration. The final list of sand mining areas [leases to be granted on riverbed & Patta land/Khatedari land, de-siltation location (ponds/lakes/dams), M-Sand Plants (alternate source of sand)] after the public hearing needs to be defined in



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the final DSR in the format as per Annexure-V. The details regarding cluster and contiguous cluster needs to be provided in Annexure-VI. The details of the transportation need to be provided in Annexure-VII.

No of Annexures	Details
Annexure -I	Details of Sand/ M-Sand Sources
Annexure -II	List of Potential Mining Leases (Existing & Proposed)
Annexure -III	Cluster & Contiguous Cluster details
Annexure -IV	Transportation Routes for individual leases and leases in Cluster
Annexure -V	Final List of Potential Mining Leases (Existing & Proposed)
Annexure -VI	Final List of Cluster & Contiguous Cluster
Annexure -VII	Final Transportation Routes for individual leases and leases in Cluster



Signature

Compliance to Enforcement and Monitoring Guidelines for Sand Mining- 2020

ANNEXURE-I

a) Rivers:

River Name/M-Sand Plant	Total Stretch of River (in KM)	Type of River (Perennial or Non-Perennial)
Kharkai River	83.4	Perennial River
Subarnarekha River	156	Perennial River

b) De-Siltation Location: (Lakes/Ponds/Dams etc.)

Name of Reservoir/Dams	Maintain/Controlled by State Govt./PSUetc.	Location	District	Tehsil	Village	Size(Ha)
Nil	Nil	Nil	Nil	Nil	Nil	Nil

c) Patta Lands/Khatedari Land:

Owner	Sy. No	Area (Ha)	District	Tehsil	Village	Agricultural Land (Yes/No)
Nil	Nil	Nil	Nil	Nil	Nil	Nil





d) M-Sand Plants:

Plant Name	Owner	District	Tehsil	Village	Geo-location	Quantity Tonnes/Annum
Nil	Nil	Nil	Nil	Nil	Nil	Nil

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Note: For inclusion of M-Sand Plant/Patta Land in DSR the plant/landowners need to submit the request to the Mining Department with complete details. Inclusion in DSR does not give them the right to operate the M-Sand Plant/Sand Mining lease.



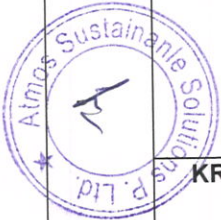
ANNEXURE-II

LIST OF POTENTIAL MINING LEASES (EXISTING & PROPOSED)



UIN	River Details	Lease Details	Area in (Ha)	Geo-Coordinate	Whether Distance of Project Location from Reserved Forest/Protected Forest is 250m ?	Mining leases within 500 Meters (if yes cluster area)	Total excavation in Tonnes /Annum considering digging depth max As 3 meters	Mineral to be mined (Sand/ Bajri/R BM etc.)	Existing/Proposed
KR1	Kharkai River Category-II	Mouza – Jadudihi , Thana - Saraikela, Thana No. - 435, Anchal-Rajnagar District - Saraikela - Kharsawan, Jharkhand Plot No. 501 (P), Topsheet No.-73f/15	18.0	1) 22°29'21.06"N 85°57'14.53"E 2) 22°29'18.29"N 85°57'14.26"E 3) 22°29'34.57"N 85°56'43.75"E 4) 22°29'42.72"N 85°56'28.15"E 5) 22°29'40.08"N 85°56'20.84"E 6) 22°29'42.09"N 85°56'19.27"E 7) 22°29'45.36"N 85°56'25.24"E 8) 22°29'41.15"N 85°56'41.15"E 9) 22°29'30.75"N 85°56'52.69"E	Yes 5600M	No	53762	Sand	Proposed
KR2	Kharkai River Category-II	Mouza - Sarjamdihi Thana - Saraikela, Thana No. - 441, Anchal-Rajnagar District - Saraikela - Kharsawan, Jharkhand Plot No. 222(P) & 834,	3.68	1)22°30'48.53"N 85°54'43.09"E 2)22°30'50.26"N 85°54'44.19"E 3)22°30'41.94"N 85°54'51.49"E 4)22°30'38.39"N 85°55'9.49"E 5)22°30'38.54"N 85°55'0.49"E 6)22°30'41.12"N 85°54'48.66"E	Yes 5000M	No	23809	Sand	Proposed

		Toposheet No.-73f/14							
KR3	Kharkai River Category-II	Mouza - Majhigan Thana - Saraikela, Thana No. - 447 Anchal-Rajnagar District - Saraikela - Kharsawan, Jharkhand Plot No. 260, or 7/260 Mouza - Baldihi, Thana - Saraikela, Thana No. - 448, Anchal-Rajnagar District - Saraikela - Kharsawan, Jharkhand Plot No. 822(P) & 823, Toposheet No.-73f/14	10.00	1)22°32'32.02"N 85°54'31.05"E 2)22°32'31.07"N 85°54'33.84"E 3)22°32'18.79"N 85°54'26.06"E 4)22°32'4.82"N 85°54'17.18"E 5)22°31'52.88"N 85°54'9.65"E 6)22°31'53.54"N 85°54'7.97"E 7)22°32'3.46"N 85°54'13.43"E 8)22°32'17.53"N 85°54'22.18"E 9)22°32'26.93"N 85°54'27.92"E	Yes 2000M	No	31320	Sand	Proposed
KR4	Kharkai River Category-II	Mouza - Dighi Thana - Gobindpur, Thana No. - 98, Anchal-Saraikela, District - Saraikela - Kharsawan, Jharkhand Plot No. 1(P), Mouza - Lakshmipur, Thana - Gobindpur, Thana No. - 99, Anchal-Rajnagar District - Saraikela - Kharsawan, Plot No. 378(P),	8.10	1) 22°41'56.78"N 85°58'34.23"E 2) 22°41'54.43"N 85°58'36.73"E 3) 22°41'48.21"N 85°58'27.53"E 4) 22°41'42.13"N 85°58'18.74"E 5) 22°41'36.36"N 85°58'10.77"E 6) 22°41'38.47"N 85°58'9.11"E 7) 22°41'46.64"N 85°58'20.24"E	No 140M	No	80219	Sand	Proposed



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		Toposheet No.-73f/14							
KR5	Kharkai River Category-II	Mauza-Nua Dih Thana - Saraikela Thana No.-0249 Anchal-Sararkela Dist.- Seraikela-Kharsawan Plot No.-528(P),529(P) Toposheet No.-73f/14	5.70	1) 22°41'36.98"N 85°59'20.12"E 2) 22°41'35.41"N 85°59'18.78"E 3) 22°41'33.93"N 85°59'29.07"E 4) 22°41'35.49"N 85°59'37.80"E 5) 22°41'32.67"N 85°59'38.63"E 6) 22°41'30.06"N 85°59'29.87"E	Yes 2600M	No	56451	Sand	Proposed
KR6		Mouza - Jambura Thana - Saraikela, Thana No. - 453, Anchal-Saraikela District - Saraikela – Kharsawan, Plot No. 1846(P)/468 Toposheet No.-73j/1	2.08	1) 22°46'52.80"N 86°2'32.79"E 2) 22°46'53.22"N 86°2'41.30"E 3) 22°46'44.50"N 86°2'52.76"E 4) 22°46'44.00"N 86°2'51.80"E 5) 22°46'51.19"N 86°2'42.84"E 6) 22°46'51.87"N 86°2'33.18"E	Yes 2000M	No	23304	Sand	Proposed
SR1	Subarnarekha River Category-II	Mouza - Balidih Thana - Chandil Thana No. - 203, Anchal-Chandil District - Saraikela – Kharsawan, Plot No. 1024(P), 2435(P)/06, Toposheet No.-73j/1	12.91	1) 22°55'43.04"N 86°0'52.50"E 2) 22°55'40.83"N 86°0'57.16"E 3) 22°55'31.86"N 86°0'53.42"E 4) 22°55'21.19"N 86°0'52.84"E 5) 22°55'20.54"N 86°0'46.83"E 6) 22°55'33.02"N 86°0'45.93"E	No 231M	No	56825	Sand	Proposed
SR2	Subarnarekha River Category-II	Mouza - Bamundih Thana - Chandil, Thana No. - 12, Anchal-Chandil District - Saraikela - Kharsawan, Jharkhand Plot No. - 949(P), Mouza - Gobindpur Thana - Chandil, Thana No. - 59 , Anchal-Chandil	48.90	1) 23°7'32.23"N 85°55'47.10"E 2) 23°7'23.29"N 85°55'52.85"E 3) 23°7'12.99"N 85°55'56.86"E 4) 23°7'11.87"N 85°55'52.78"E 5) 23°6'59.63"N 85°55'51.18"E 6) 23°6'59.19"N 85°55'53.60"E 7) 23°6'49.18"N 85°55'50.30"E 8) 23°6'35.23"N 85°55'41.29"E 9) 23°6'18.30"N 85°55'34.74"E 10) 23°6'20.61"N 85°55'26.40"E 11) 23°6'41.12"N 85°55'36.11"E 12) 23°7'1.95"N 85°55'47.39"E	Yes 790M	No	714898	Sand	Proposed



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		District - Saraikela - Kharsawan, Jharkhand Plot No. 631(P), Mouza - Sapada Thana - Chandil, Thana No. - 60 , Anchal-Kurku District - Saraikela - Kharsawan, Plot No. 1107(P), 2122(P) & 1(P) Toposheet No.-73e/16		13) 23° 7'26.25"N 85°55'40.86"E					
SR3	Subarnarekha River Category-II	Mouza - Saparam Thana - Chandil, Thana No. - 6, Anchal-Kurku District - Saraikela - Kharsawan, Jharkhand Plot No. 752(P), 855(P), Mouza - Soro Thana - Chandil, Thana No. - 3, Anchal-Chandil District - Saraikela - Kharsawan, Jharkhand Plot No. 2106(P) & 1669(P), Mouza - Birdih Thana - Chandil, Thana No. - 5, Anchal-Ichagarh District - Saraikela - Kharsawan, Jharkhand Plot No. 741(P), Toposheet No.-73e/16	76.77	1) 23° 7'46.13"N 85°54'42.85"E 2) 23° 7'38.32"N 85°54'41.01"E 3) 23° 7'39.03"N 85°54'37.49"E 4) 23° 7'44.15"N 85°54'6.64"E 5) 23° 7'46.60"N 85°53'57.02"E 6) 23° 7'53.99"N 85°53'51.01"E 7) 23° 8'9.40"N 85°53'46.83"E 8) 23°8'32.25"N 85°53'50.06"E 9) 23°8'46.69"N 85°53'48.17"E 10) 23°8'58.27"N 85°53'44.32"E 11) 23°9'7.57"N 85°53'37.33"E 12) 23°9'9.08"N 85°53'45.82"E 13) 23°8'58.56"N 85°53'50.88"E 14) 23°8'42.53"N 85°53'55.59"E 15) 23°8'34.91"N 85°53'55.20"E 16) 23°8'21.55"N 85°53'55.84"E 17) 23°8'2.41"N 85°53'57.50"E 18) 23°7'47.84"N 85°54'11.83"E 19) 23°7'46.52"N 85°54'40.61"E	No 20	Yes Cluster-I	1122347	Sand	Proposed



Signature



EX.01	Subarnarekha River Category-II	Soro (Jorgodih) Sand Ghat M/S Jsmdc Ltd Mouza-Jorgodih P.S.-Ichadih, P.O.-Soro, Khata No.-700 Plot No.-2106(P) District – Saraikela- Kharsawan	4.90	1) 23° 07'37.61"N 85°54'41.93"E 2) 23° 07'42.30"N 85°54'43.62"E 3) 23° 07'42.11"N 85°54'48.86"E 4) 23° 07'41.89"N 85°54'54.52"E 5) 23° 07'36.81"N 85°54'53.01"E 6) 23° 07'37.06"N 85°54'47.24"E		Yes Cluster-I	370.32Cum Per day as per EC	Sand	Existing
Total Area Proposed			186.14				2162935		
Total Existing			4.90				370.32CPD		

- Regarding DSR sand not any comments received from public side.

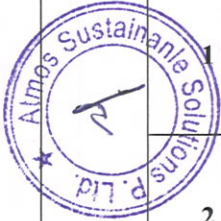


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**CATEGORY-I (SARAIKELA-KHARSAWA DISTRICT)
(PROPOSED SAND MINING GHATS FOR PANCHAYAT)**

S.NO	NAME OF RIVER	DETAILS	AREA IN (HA)	GEO-COORDINATE
1	Sanjai River	Mauza- Bejai Block- Adityapur Thana No.- 197 Plot No.- 01(P) Dist.- Saraikele Kharsawa	1.0	(A) 22°45'35.16"N 85°59'7.98"E (B) 22°45'36.72"N 85°59'7.94"E (C) 22°45'33.37"N 85°58'59.46"E (D) 22°45'32.34"N 85°59'0.04"E
2	Sanjai River	Mauza- Deoli Block- Adityapur Thana No.-188 Plot No.- 1421(P) Dist.- Saraikele Kharsawa	0.46	(A) 22°46'7.09"N 86° 1'21.40"E (B) 22°46'6.25"N 86° 1'21.60"E (C) 22°46'5.87"N 86° 1'15.00"E (D) 22°46'6.63"N 86° 1'15.17"E
3	Sanjai River	Mauza- Dasiadih Block- Kharsawa Thana No.-266 Plot No.- 732(P) Dist.- Saraikele Kharsawa	2.89	(A) 22°44'54.27"N 85°53'46.73"E (B) 22°44'52.35"N 85°53'46.76"E (C) 22°44'51.24"N 85°53'31.33"E (D) 22°44'53.41"N 85°53'31.42"E



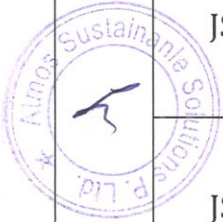
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1) PATTA LANDS/KHATEDARI LAND: (EXISTING & PROPOSED)

Owner	Sy.No/UIN	Area (In Ha)	District	Anchal	Village	Total Reserve (MT)	Total Mineral to be Mined 60% (MT)	Existing /Proposed
JSMDC	KR-1	18.00	Saraikela- Kharsawan	Rajnagar	Jadudihi	89604	53762	Proposed
JSMDC	KR -2	3.68	Saraikela- Kharsawan	Rajnagar	Sarjamdihi	39681	23809	Proposed
JSMDC	KR -3	10.00	Saraikela- Kharsawan	Rajnagar	Majhigan	52200	31320	Proposed
				Rajnagar	Balidihi			
JSMDC	KR -4	8.10	Saraikela- Kharsawan	Saraikela	Dighi	133699	80219	Proposed
				Rajnagar	Lakshmipur			
JSMDC	KR -5	5.70	Saraikela- Kharsawan	Saraikela	Nuadih	94084	56451	Proposed
JSMDC	KR -6	2.08	Saraikela- Kharsawan	Saraikela	Jambera	38840	23304	Proposed
JSMDC	SR-1	12.91	Saraikela- Kharsawan	Chandil	Balidih	94708	56825	Proposed

JSMDC	SR-2	48.90	Saraikela-Kharsawan	Chandil	Bamundih	1191497	714898	Proposed
				Chandil	Gobindpur			
				Kukru	Sapada			
JSMDC	SR-3	76.77	Saraikela-Kharsawan	Kukru	Saparam	1870578	1122347	Proposed
				Chandil	Soro			
				Ichagarh	Birdih			
JSMDC	EX.01	4.90	Saraikela-Kharsawan	Ichagarh	Jorgodih			Existing
Total Proposed Area		186.14				3604891	2162935	Total- 09
Existing Area		4.90				370.32 CPD		Total- 01



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2) De-Siltation Location:(Lakes/Ponds/Dams etc.) (Existing & proposed)

Name of Reservoir/Dam	Maintain /Controlled by State Govt./PSU etc.	Location	District	Tehsil	Village	Size(Ha)	QuantityMT /Year	Existing /Proposed
NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL



3) M-Sand Plants :(existing & proposed)

Plant Name	Owner	District	Tehsil	Village	Geo-location	QuantityTonnes/A nnum	Existing/Proposed
NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL

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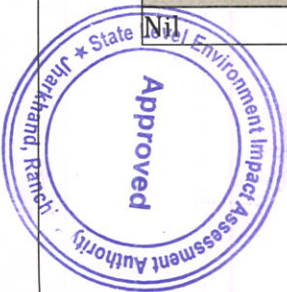


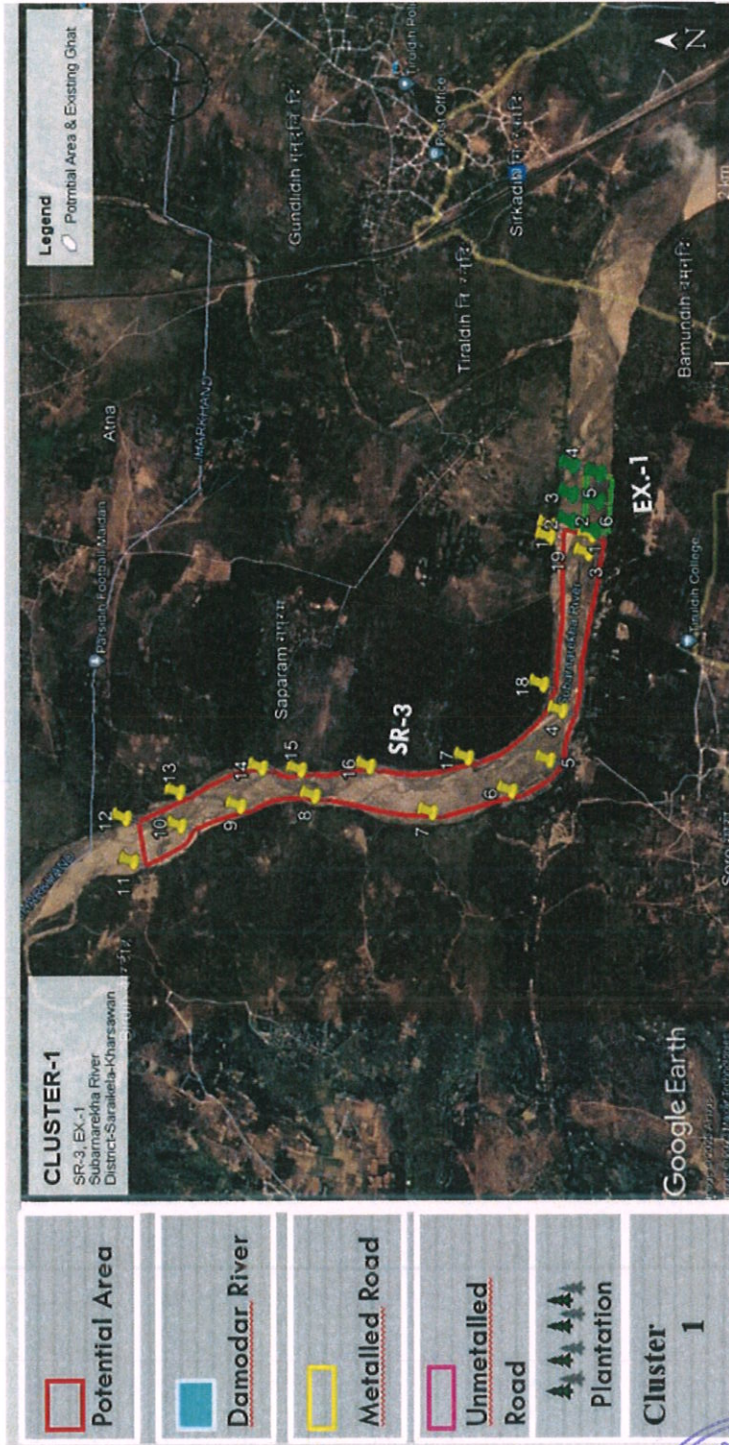
ANNEXURE-III**Cluster & Contiguous Cluster details****1) Clusters:**

River Name	ClusterNo.	Lease No	Location (Riverbed /Patta Land)	Village	Area (in Ha)	Total Excavation (Ton)	Total Mineral Excavation(Ton)
Subarnarekha River	Cluster No.-01	SR03 & EX01	Saparam, Soro, Birdih with Jorgodih Plot No.-2106(P), 1669(P) with 2106(P)	Saparam, Soro, Birdih with Jorgodih Anchal-Ichagarh	76.77 + 4.90 = 81.67ha	1122347Ton + 370.32CPD	1122347Ton + 370.32CPD

2) Contiguous Clusters:

River Name	Contiguous Cluster No.	Cluster No	Numberof leases in the cluster	Location (Riverbed /Patta Land)	Distance between clusters	Village	Area of Cluster(Ha)	Total Mineral Excavation (Ton)
Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil





Cluster Map of Potential Area Of Saraikela-Kharsawan District

	Water body		No High Tension Line		Metalled road		Human Settlement		No Religious Places		No Archaeological Site		Potential Area
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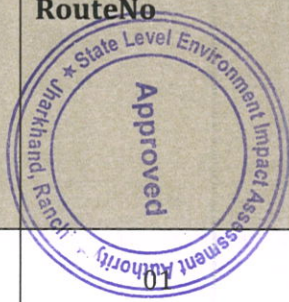


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ANNEXURE-IV**TRANSPORTATION ROUTES FOR INDIVIDUAL LEASES AND LEASES IN CLUSTER**

Lease No	Transportation RouteNo	Number of tractors /day of lease	Number of tractor /dayof allthe lease on route	Length of Route in KM	Type of Road (Black Topped/ unpaved)	Recommend ation for road(Black Topped/ unpaved)	The roadwill be Construc ted byGovt/ Lease Owner	Route Map & Location on
KR-1	01	67	67	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
KR -2	02	30	30	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
KR -3	03	39	39	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
KR -4	04	100	100	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
KR -5	05	71	71	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
KR -6	06	29	29	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
SR-1	07	71	71	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached



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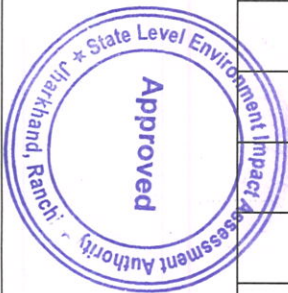
SR-2	08	894	894	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
SR-3	09	1403	1403	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached

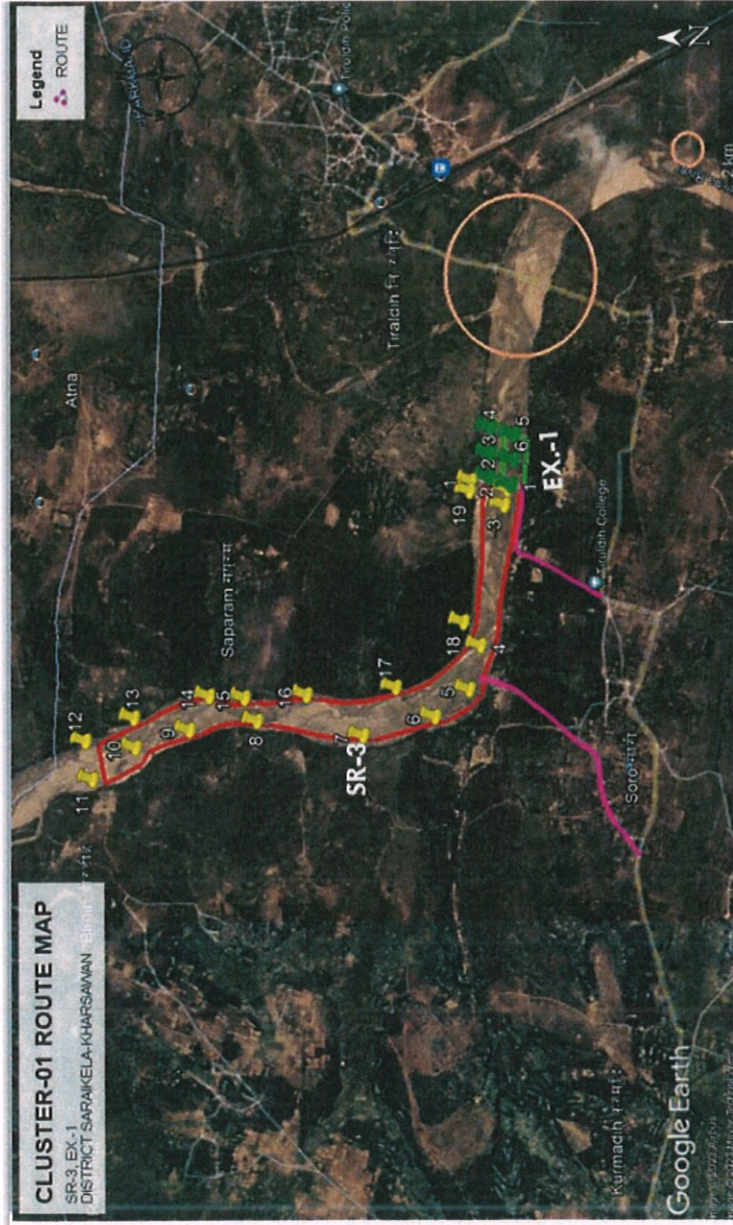
Transportation Routes of sand Ghat from Village to MDR/SH/NH

UIN NO.	Distance	Village Name/Road Name
KR1	Village road-3.1 km	Jadudih, Gulia
	MDR	Kita- Nimdih Road
KR2	Village road- 1.72 km	Sarjamdihi
	MDR	Chaibasa-Nimdih Road
KR3	Village road- 0.57 km	Balidih, Majgaon
	MDR	Icha-Nimdih Road
KR4	Village road-1.0 km	Dighi
	MDR	Tirildih-Bikrampur Road
KR5	Village road-1.54 km	Nuadih, Thasakpur
	MDR	Hardala-Madhupur Road
KR6	Village road-2.80 km	Chamaru
	MDR	Nengtasai-Rangamatia Road
SR1	Village road- 0.85 km	Rudia
	MDR	Chainpur-Rudia Road
SR2	Village road-1.10 km	Khiri, Bamundih
	MDR	Soro-Tiruldih Road
SR3	Village road-1.63 km	Soro
	MDR	Situ-Tiruldih Road
EX01	Near Tirudih College-0.98km	Soro Village



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	Potential Area
	Damodar River
	Metalled Road
	Unmetalled Road
	Plantation
	Cluster-1 Route Map

Cluster Route Map of Potential Area & Existing Area Of Saraikela-Kharsawan District

	Water body
	No High Tension Line
	Metalled road
	Human Settlement
	No Religious Places
	No Archaeological Site
	No. Bridge

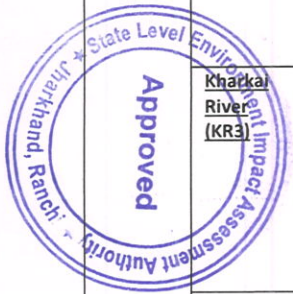


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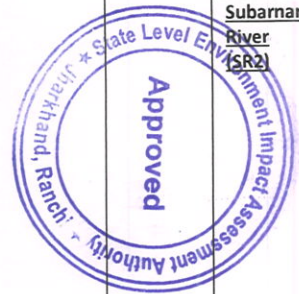
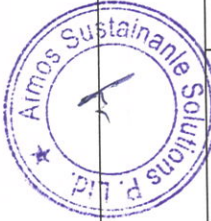


FINAL LIST OF SAND GHAT (EXISTING & PROPOSED)

River Name	Lease Details	Name of Sand Ghat	Khata No. & Plot No.	Geo-Coordinates	Minin g Lease s within 500m (if yes Cluste r area)	Area in Ha.	Dimenson of Sand Ghat (L x W x D) m	Sp. Gravity of Sand	Total Excavation in Cum	Total Excavation in Ton	Total Mining Area of 60% in Ton
<u>Kharkai River (KR1)</u>	Mauza-Jadudihi Anchal-Rajnagar District-Saraikela-Kharsawan	Jadudihi Sand Ghat	Khata No.-72 Plot No.-501(P)	1) 22°29'21.06"N 85°57'14.53"E 2) 22°29'18.29"N 85°57'14.26"E 3) 22°29'34.57"N 85°56'43.75"E 4) 22°29'42.72"N 85°56'28.15"E 5) 22°29'40.08"N 85°56'20.84"E 6) 22°29'42.09"N 85°56'19.27"E 7) 22°29'45.36"N 85°56'25.24"E 8) 22°29'41.15"N 85°56'41.15"E 9) 22°29'30.75"N 85°56'52.69"E	No	18.0	1735.10 x 103.74 x 0.19	2.62	34200	89604	53762
<u>Kharkai River (KR2)</u>	Mauza-Sarjamdihi Anchal-Rajnagar District-Saraikela-Kharsawan	Sarjamdihi Sand Ghat	Khata No.-32 Plot No. -222(P) <u>Plot No 834 is not mention in C.O. letter</u>	1)22°30'48.53"N 85°54'43.09"E 2)22°30'50.26"N 85°54'44.19"E 3)22°30'41.94"N 85°54'51.49"E 4)22°30'38.39"N 85°55'9.49"E 5)22°30'38.54"N 85°55'0.49"E 6)22°30'41.12"N 85°54'48.66"E	No	3.68	1153.09 x 31.91 x 0.41	2.63	15088	39681	23809
<u>Kharkai River (KR3)</u>	Mauza – Majhigan, Balidihi Anchal-Rajnagar District-Saraikela-Kharsawan	Majhigan & Balidih Sand Gnat	Khata No- 67 Plot No. -260 or 7/260 Khata No- 103/104 Plot No.-822(P), 823	1)22°32'32.02"N 85°54'31.05"E 2)22°32'31.07"N 85°54'33.84"E 3)22°32'18.79"N 85°54'26.06"E 4)22°32'4.82"N 85°54'17.18"E 5)22°31'52.88"N 85°54'9.65"E 6)22°31'53.54"N 85°54'7.97"E 7)22°32'3.46"N 85°54'13.43"E 8)22°32'17.53"N 85°54'22.18"E 9)22°32'26.93"N 85°54'27.92"E	No	10.0	1264.46 x 79.09 x 0.20	2.61	20000	52200	31320
<u>Kharkai River (KR4)</u>	Mauza-Dighi, Anchal-Saraikela Lakshmipur	Dighi & Lakshripur(Lakhipur) Sand Gnat	Khata No- Plot No.- 1(P) Khata No.- 93 Plot No.-378(P)	1) 22°41'56.78"N 85°58'34.23"E 2) 22°41'54.43"N 85°58'36.73"E 3) 22°41'48.21"N 85°58'27.53"E 4) 22°41'42.13"N 85°58'18.74"E 5) 22°41'36.36"N 85°58'10.77"E	No	8.10	861.43 x 94.03 x 0.63	2.62	51030	133699	80219



	Anchal-Rajnagar District Saraikela-Kharsawan			6) 22°41'38.47"N 85°58'9.11"E 7) 22°41'46.64"N 85°58'20.24"E							
Kharkai River (KR5)	Mauza- Nuadih Anchal-Saraikela District-Saraikela-Kharsawan	Nuadih Sand Ghat	Khata No.-29 Plot No.-528(P), 529(P)	1) 22°41'36.98"N 85°59'20.12"E 2) 22°41'35.41"N 85°59'18.78"E 3) 22°41'33.93"N 85°59'29.07"E 4) 22°41'35.49"N 85°59'37.80"E 5) 22°41'32.67"N 85°59'38.63"E 6) 22°41'30.06"N 85°59'29.87"E	No	5.70	$\frac{660.21 \times 86.34}{x 0.63}$	2.62	35910	94084	56451
Kharkai River (KR6)	Mauza- Jambera Anchal-Saraikela District-Saraikela-Kharsawan	Jambera Sand Ghat	Khata No.-42 Plot No.-1846(P) As per C.O letter plot no. 468	1) 22°46'52.80"N 86°2'32.79"E 2) 22°46'53.22"N 86°2'41.30"E 3) 22°46'44.50"N 86°2'52.76"E 4) 22°46'44.00"N 86°2'51.80"E 5) 22°46'51.19"N 86°2'42.84"E 6) 22°46'51.87"N 86°2'33.18"E	No	2.08	$\frac{625.68 \times 33.24}{x 0.71}$	2.63	14768	38840	23304
Subarnarekha River (SR1)	Mauza- Balidih Anchal-Chandil District-Saraikela-Kharsawan	Balidih Sand Ghat	Khata No.-83 Plot No.-1024(P), 2435(P)/06	1) 22°55'43.04"N 86°0'52.50"E 2) 22°55'40.83"N 86°0'57.16"E 3) 22°55'31.86"N 86°0'53.42"E 4) 22°55'21.19"N 86°0'52.84"E 5) 22°55'20.54"N 86°0'46.83"E 6) 22°55'33.02"N 86°0'45.93"E	No	12.91	$\frac{718.45 \times 179.69}{x 0.28}$	2.62	36148	94708	56825
Subarnarekha River (SR2)	Mauza- Bamundih Anchal-Chandil District-Saraikela-Kharsawan	Bamundih, Gobindpur, Sapada Sand Ghat	Khata No.- Plot No.- 949(P) Plot No.- 631(P) Plot No.- 1107(P), 2122(P), 1(P)	1) 23°7'32.23"N 85°55'47.10"E 2) 23°7'23.29"N 85°55'52.85"E 3) 23°7'12.99"N 85°55'56.86"E 4) 23°7'11.87"N 85°55'52.78"E 5) 23°6'59.63"N 85°55'51.18"E 6) 23°6'59.19"N 85°55'53.60"E 7) 23°6'49.18"N 85°55'50.30"E 8) 23°6'35.23"N 85°55'41.29"E 9) 23°6'18.30"N 85°55'34.74"E 10) 23°6'20.61"N 85°55'26.40"E 11) 23°6'41.12"N 85°55'36.11"E 12) 23°7'1.95"N 85°55'47.39"E 13) 23°7'26.25"N 85°55'40.86"E	No	48.90	$\frac{2270.48 \times 215.37}{x 0.93}$	2.62	454770	1191497	714898
Subarnarekha River (SR3)	Mauza- Saparam Anchal-Kurku District-Saraikela-Kharsawan	Saparam, Soro, Birdih Sand Ghat	Khata No.- Plot No.-752(P), 855(P), 429(P), 1(P)	1) 23°7'46.13"N 85°54'42.85"E 2) 23°7'38.32"N 85°54'41.01"E 3) 23°7'39.03"N 85°54'37.49"E 4) 23°7'44.15"N 85°54'6.64"E	Yes Cluster No.-01	76.77	$\frac{3667.82 \times 259.55}{x 0.93}$	2.62	713961	1870578	1122347



	Mauza- Soro Anchal- Chandil Mauza- Birdih Anchal- Ichagarh District- Saraikela- Kharsawan		Plot No.- 2106(P), 1669(P) Plot No-741(P)	5) 23° 7'46.60"N 85°53'57.02"E 6) 23° 7'53.99"N 85°53'51.01"E 7) 23° 8'9.40"N 85°53'46.83"E 8) 23°8'32.25"N 85°53'50.06"E 9) 23°8'46.69"N 85°53'48.17"E 10) 23°8'58.27"N 85°53'44.32"E 11) 23°9'7.57"N 85°53'37.33"E 12) 23°9'9.08"N 85°53'45.82"E 13) 23°8'58.56"N 85°53'50.88"E 14) 23°8'42.53"N 85°53'55.59"E 15) 23°8'34.91"N 85°53'55.20"E 16) 23°8'21.55"N 85°53'55.84"E 17) 23°8'2.41"N 85°53'57.50"E 18) 23°7'47.84"N 85°54'11.83"E 19) 23°7'46.52"N 85°54'40.61"E							
Subarnarekha River	Mauza- Jorgodih Anchal- Ichagarh District- Saraikela- Kharsawan	Soro(Jorgodih) Sand Ghat	Khata No.-700 Plot No.- 2106(P),	1) 23° 07'37.61"N 85°54'41.93"E 2) 23° 07'42.30"N 85°54'43.62"E 3) 23° 07'42.11"N 85°54'48.86"E 4) 23° 07'41.89"N 85°54'54.52"E 5) 23° 07'36.81"N 85°54'53.01"E 6) 23° 07'37.06"N 85°54'47.24"E	Yes Cluster No.-01	4.90	310.82 x 157.64		370.32 Cum First Year and Reset four year 296.26cu m(As per EC letter)	Existing Mine	Existing Mine



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**REPORT FROM CIRCLE OFFICER, DIVISIONAL FOREST OFFICER & WILD LIFE
NOC FROM DIFFERENT COMPETENT AUTHORITY**

District	Anchal	Village/Mauza	Khata & Plot No	क्या अवेदित भूमि की कोटि सर्वेक्षण खतियान तथा रजिस्टर II में जंगल झरी के रूप में दर्ज है?	Whether Distance of Project Location from Reserved Forest/Protected Forest is 250m ?	Wild life DFO letter No with Date
Saraikela-Kharsawan	Rajnagar	Jadudihi	Khata No.-72 Plot No.-501(P)	No Letter No.-183 Date- 21.02.2023	Letter No.- 362/Saraikela Date- 22.02.2023 & Letter No.-330 Date- 24.02.2023	Letter No.- 362/Saraikela Date- 22.02.2023
Saraikela-Kharsawan	Rajnagar	Sarjamdihi	Khata No.-32 Plot No.-222(P)	No Letter No.-182 Date- 21.02.2023	Letter No.- 362/Saraikela Date- 22.02.2023 & Letter No.-330 Date- 24.02.2023	Letter No.- 362/Saraikela Date- 22.02.2023
Saraikela-Kharsawan	Rajnagar	Majhigan	Khata No.-67 Plot No.-7/260	No Letter No.-180 Date- 21.02.2023	Letter No.- 362/Saraikela Date- 22.02.2023 & Letter No.-330 Date- 24.02.2023	Letter No.- 362/Saraikela Date- 22.02.2023
Saraikela-Kharsawan	Rajnagar	Balidihi	Khata No.-103 & 104 Plot No.-822(P), 823	No Letter No.-181 Date- 21.02.2023 <i>As per C.O letter-हाल सर्वे खतियान पर अनाबाद बिहार सरकार तथा अनबाद सर्वसाधारण में खेसरा</i>	Letter No.- 362/Saraikela Date- 22.02.2023 & Letter No.-330 Date- 24.02.2023	Letter No.- 362/Saraikela Date- 22.02.2023



District Survey Report Saraikela-Kharsawan, January-2023

				संख्या-822(पी), 823 दर्ज नहीं है		
Saraikela-Kharsawan	Saraikela	Dighi	Khata No.-73 Plot No.-1(P)	No Letter No.-350 Date- 28.02.2023	Letter No.- 362/Saraikela Date- 22.02.2023	Letter No.- 362/Saraikela Date- 22.02.2023
Saraikela-Kharsawan	Rajnagar	Lakshmipur/Lakhipur	Khata No.-93 Plot No.-378(P)	No Letter No.-179 Date- 21.02.2023	Letter No.- 362/Saraikela Date- 22.02.2023	Letter No.- 362/Saraikela Date- 22.02.2023
Saraikela-Kharsawan	Saraikela	Nuadih	Khata No.-29 Plot No.-528(P), 529(P)	No Letter No.-351 Date- 28.02.2023	Letter No.- 362/Saraikela Date- 22.02.2023	Letter No.- 362/Saraikela Date- 22.02.2023
Saraikela-Kharsawan	Saraikela	Jambera	Khata No.-42 Plot No.-1846(P) (As per C.O letter plot no 468)	No Letter No.-339 Date- 03.03.2023	Letter No.- 362/Saraikela Date- 22.02.2023	Letter No.- 362/Saraikela Date- 22.02.2023
Saraikela-Kharsawan	Chandil	Balidih	Khata No.-83 Plot No.- 1024(P), 2435(P) <u>Plot No. 06 in place of 2435(P) as per C.O letter</u>	No Letter No.-163 Date- 20.02.2023	Letter No.- 362/Saraikela Date- 22.02.2023	Letter No.- 362/Saraikela Date- 22.02.2023
Saraikela-Kharsawan	Chandil	Bamundih	Khata No.-65 Plot No.-949(P)	No Letter No.-163 Date- 20.02.2023	Letter No.- 362/Saraikela Date- 22.02.2023	Letter No.- 362/Saraikela Date- 22.02.2023
Saraikela-Kharsawan	Chandil	Gobindpur	Khata No.-69 Plot No.-631(P)	No Letter No.-163 Date- 20.02.2023	Letter No.- 362/Saraikela Date- 22.02.2023	Letter No.- 362/Saraikela Date- 22.02.2023
Saraikela-Kharsawan	Kukru	Sapada	Khata No.- Plot No.-1107(P), 2122(P), 1(P) <u>Plot No. not mention in C.O. letter</u>	No Letter No.-167 Date- 21.02.2023	Letter No.- 362/Saraikela Date- 22.02.2023	Letter No.- 362/Saraikela Date- 22.02.2023
Saraikela-	Kukru	Saparam	Khata No.-	No	Letter No.-	Letter No.-



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District Survey Report Saraikela-Kharsawan, January-2023

Kharsawan			Plot No.-752(P), 855(P), 429(P), 1(P) <u>Plot No. not mention in C.O. letter</u>	Letter No.-168 Date- 21.02.2023	362/Saraikela Date- 22.02.2023	362/Saraikela Date- 22.02.2023
Saraikela- Kharsawan	Chandil	Soro	Khata No.-700 Plot No.-2106(P) Khata No.-699, Plot No.- 1669(P)	No Letter No.-163 Date- 20.02.2023	Letter No.- 362/Saraikela Date- 22.02.2023	Letter No.- 362/Saraikela Date- 22.02.2023
Saraikela- Kharsawan	Ichagarh	Birdih	Khata No.-131 Plot No.-741(P)	No Letter No.-143 Date- 20.02.2023	Letter No.- 362/Saraikela Date- 22.02.2023	Letter No.- 362/Saraikela Date- 22.02.2023



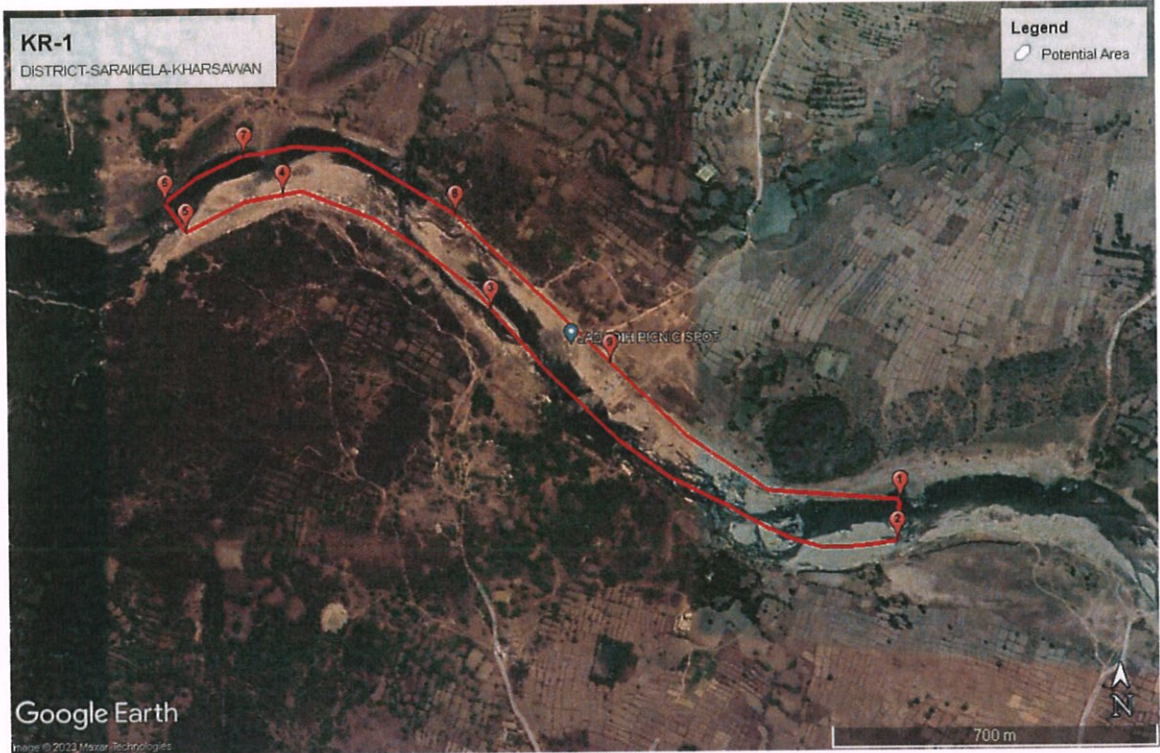
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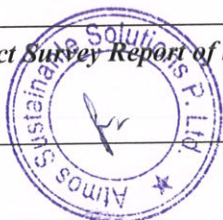


GOOGLE IMAGE OF POTENTIAL AREA OF SARAIKELA-KHARSAWAN DISTRICT

LEASE 1



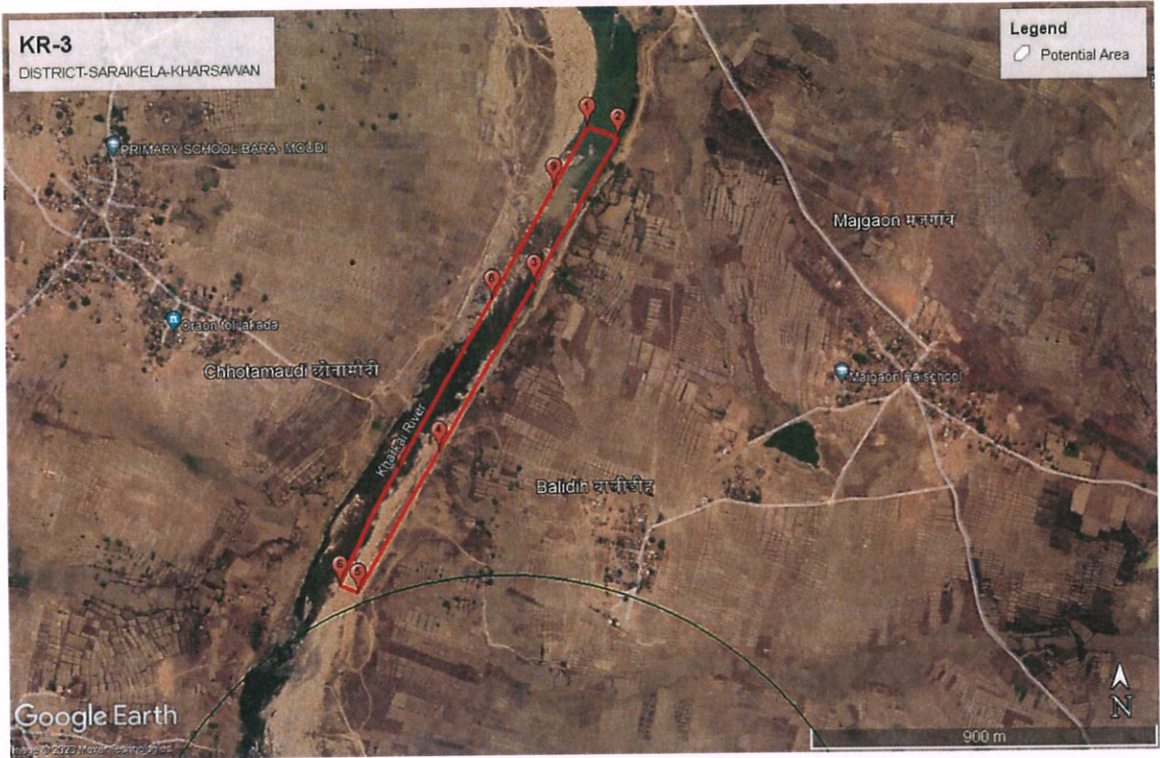
LEASE 2



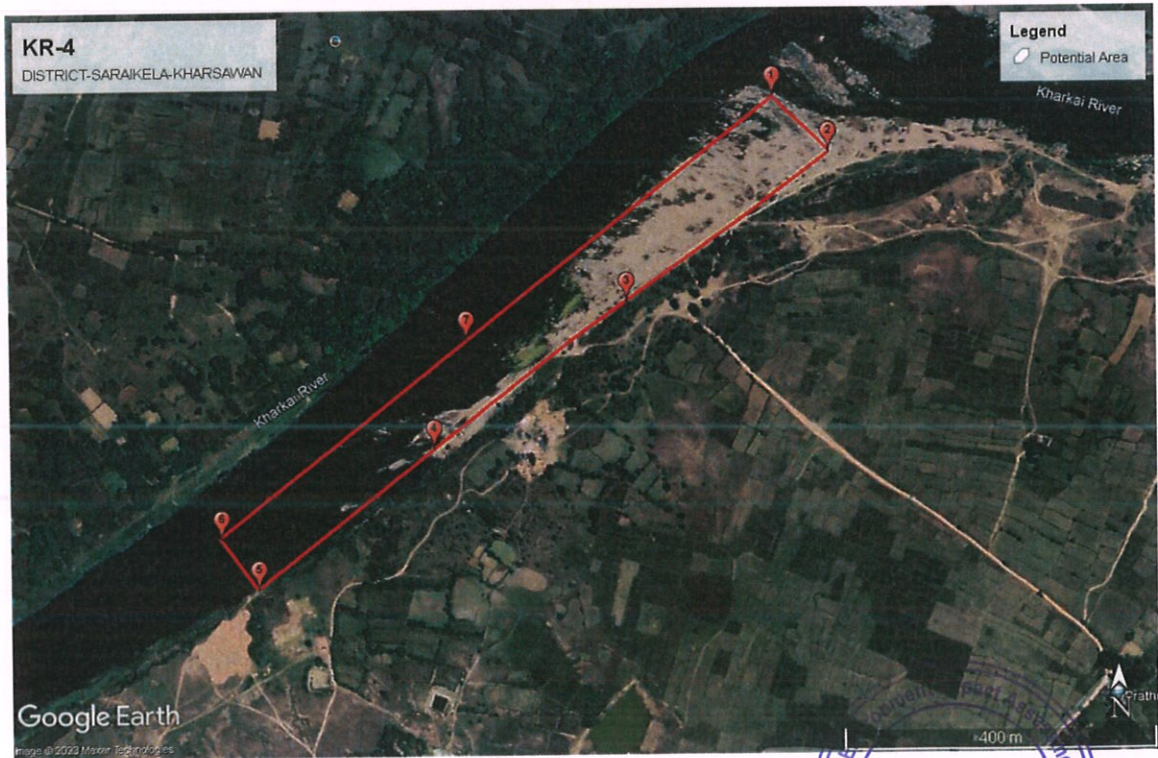
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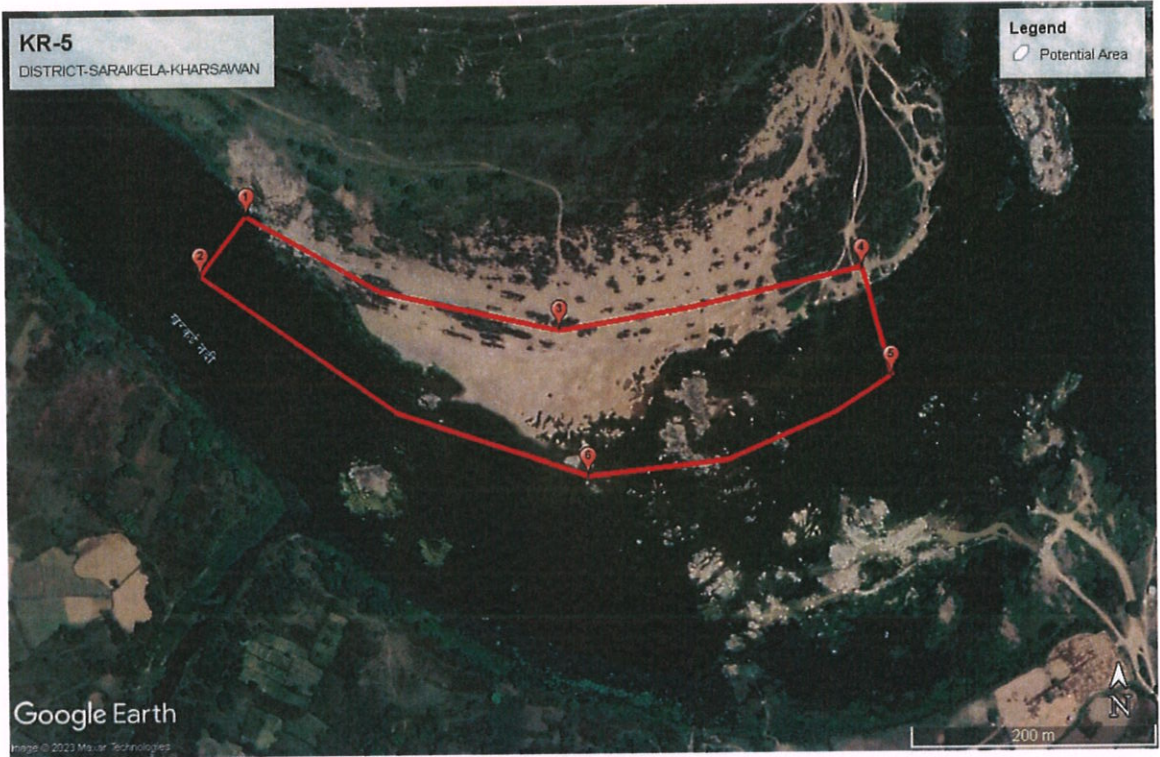
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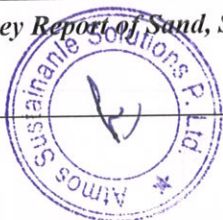
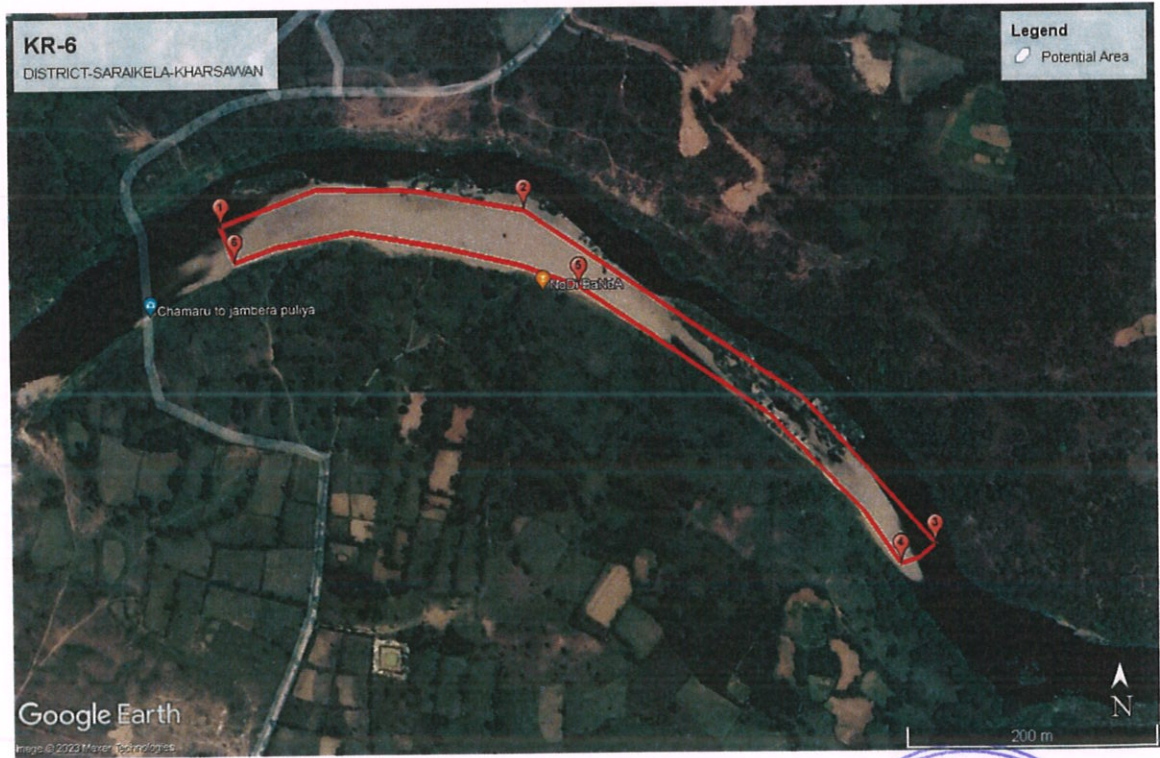
LEASE 4



LEASE 5



LEASE 6



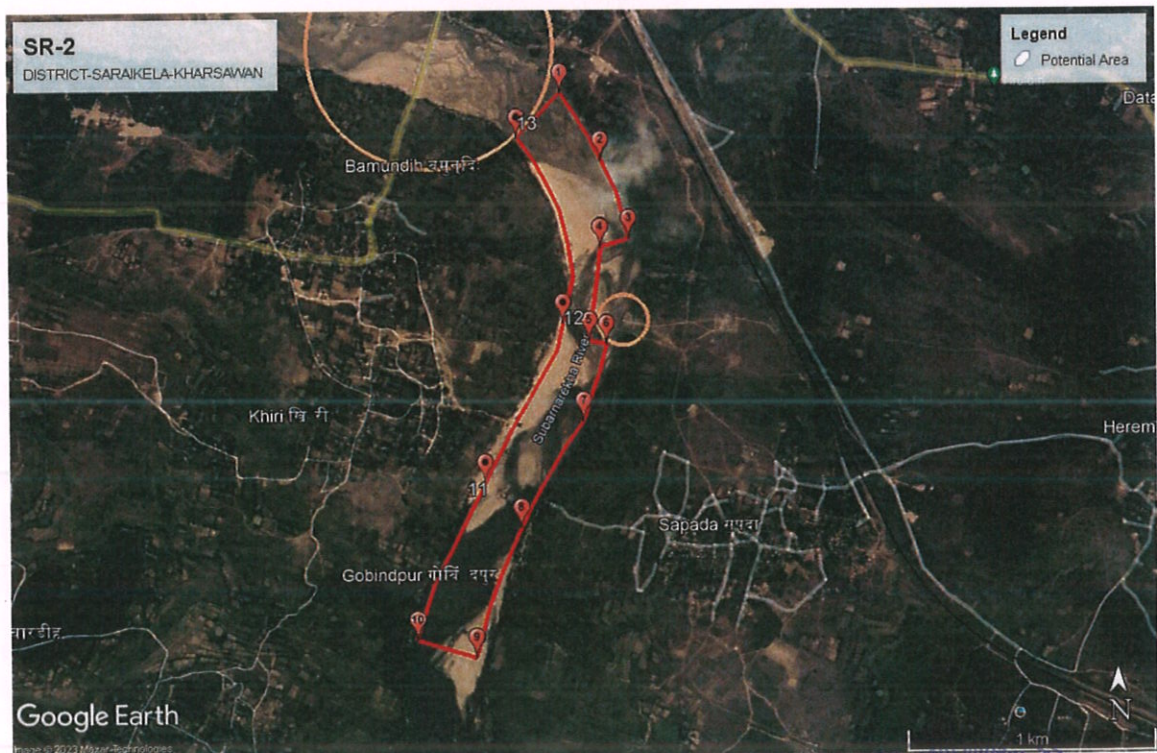
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LEASE 7



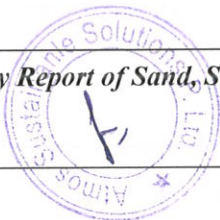
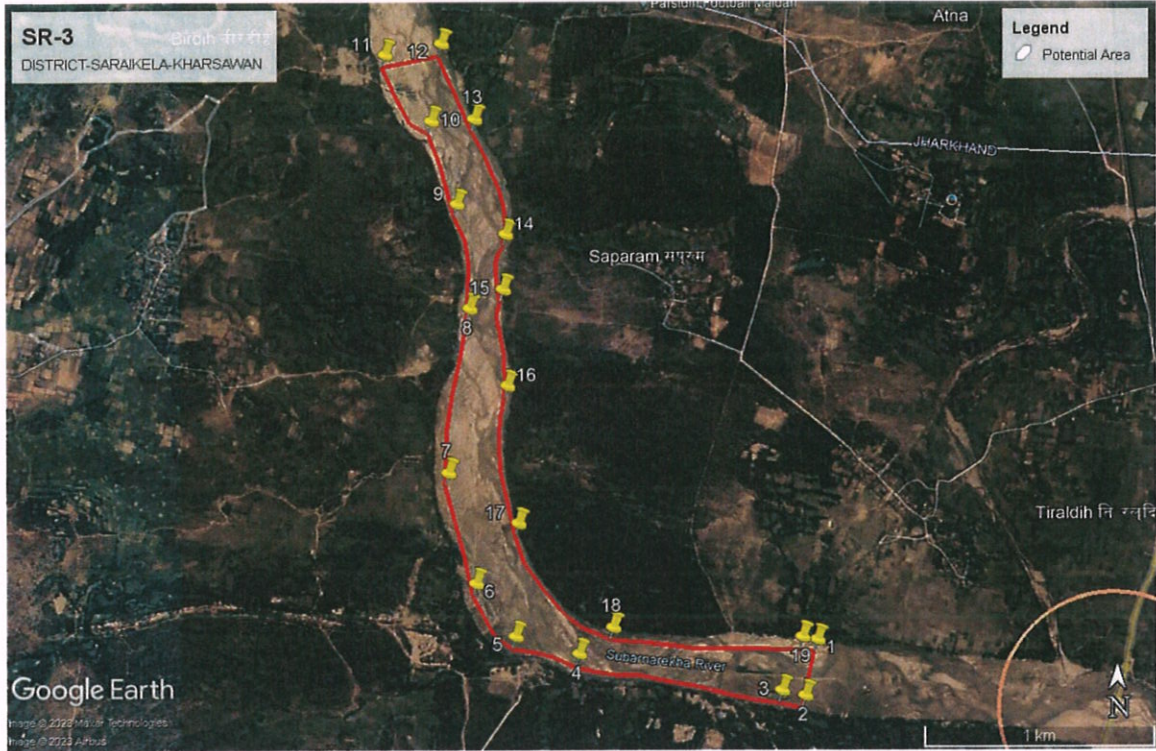
LEASE 8



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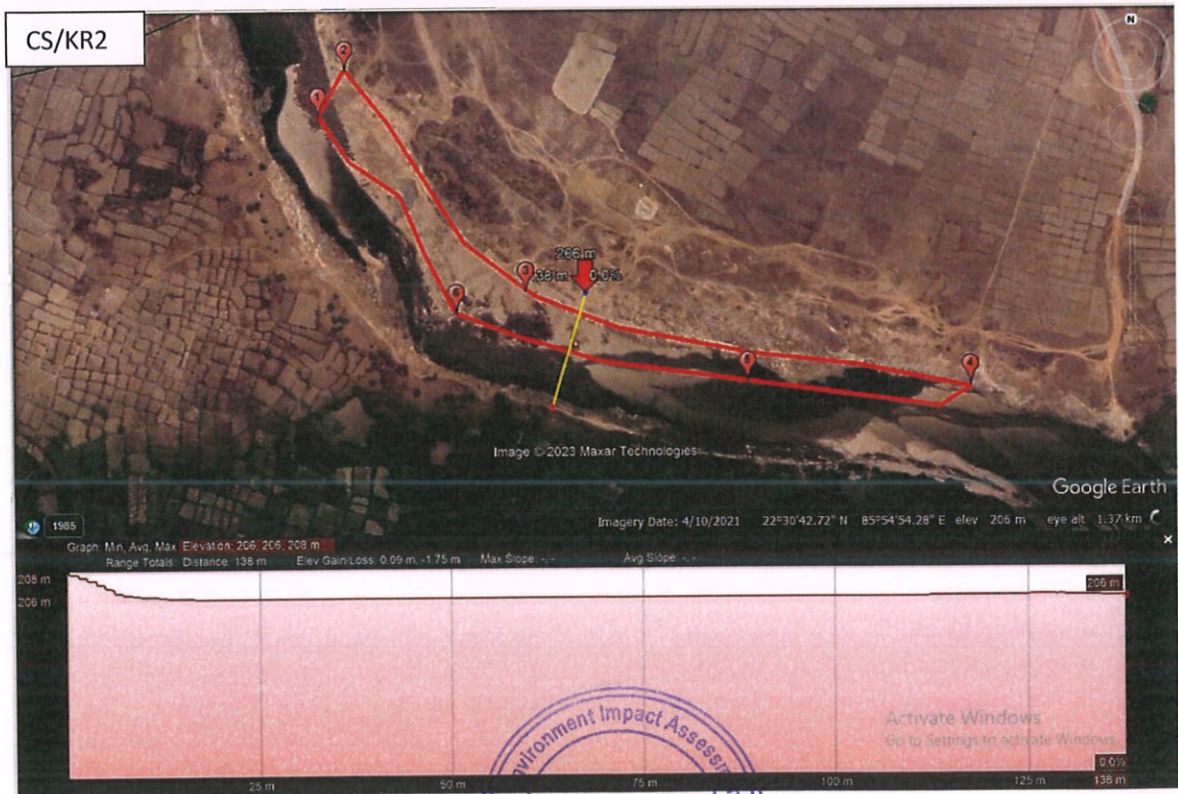


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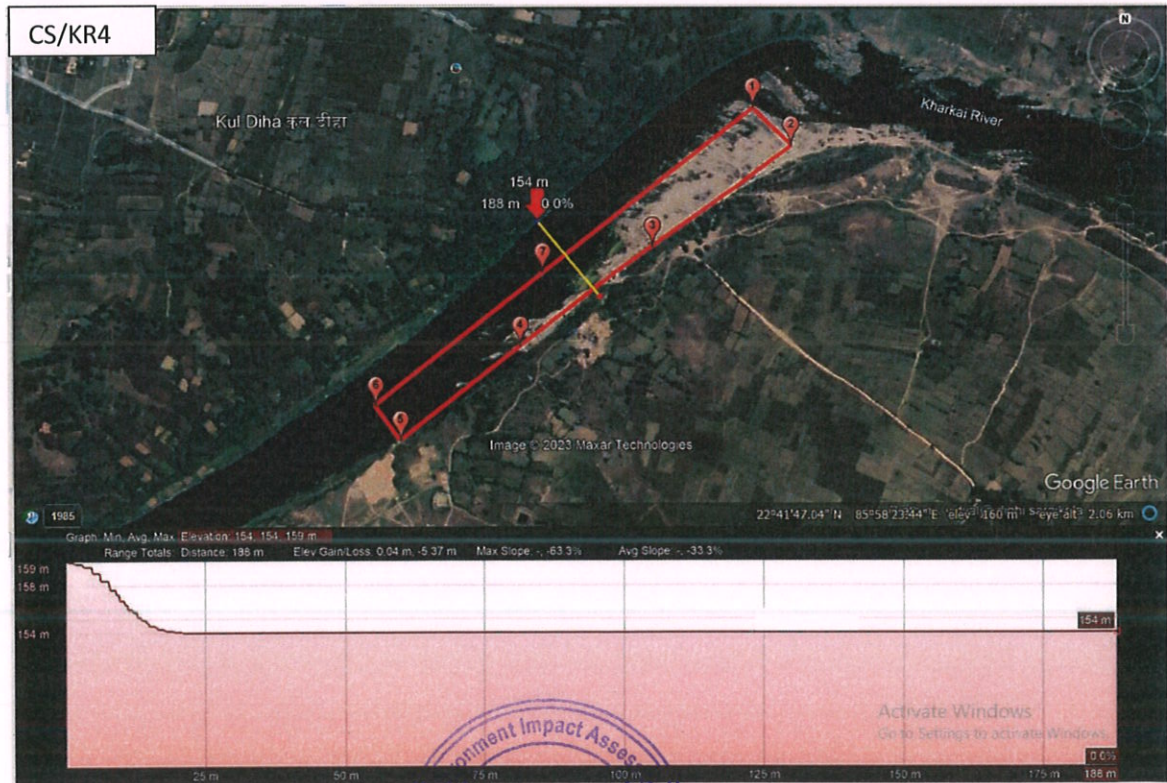
CROSS SECTION OF RIVER



Environment Impact Assessment Authority
State Level
Approved

Atmos Sustainable Solutions Pvt. Ltd.

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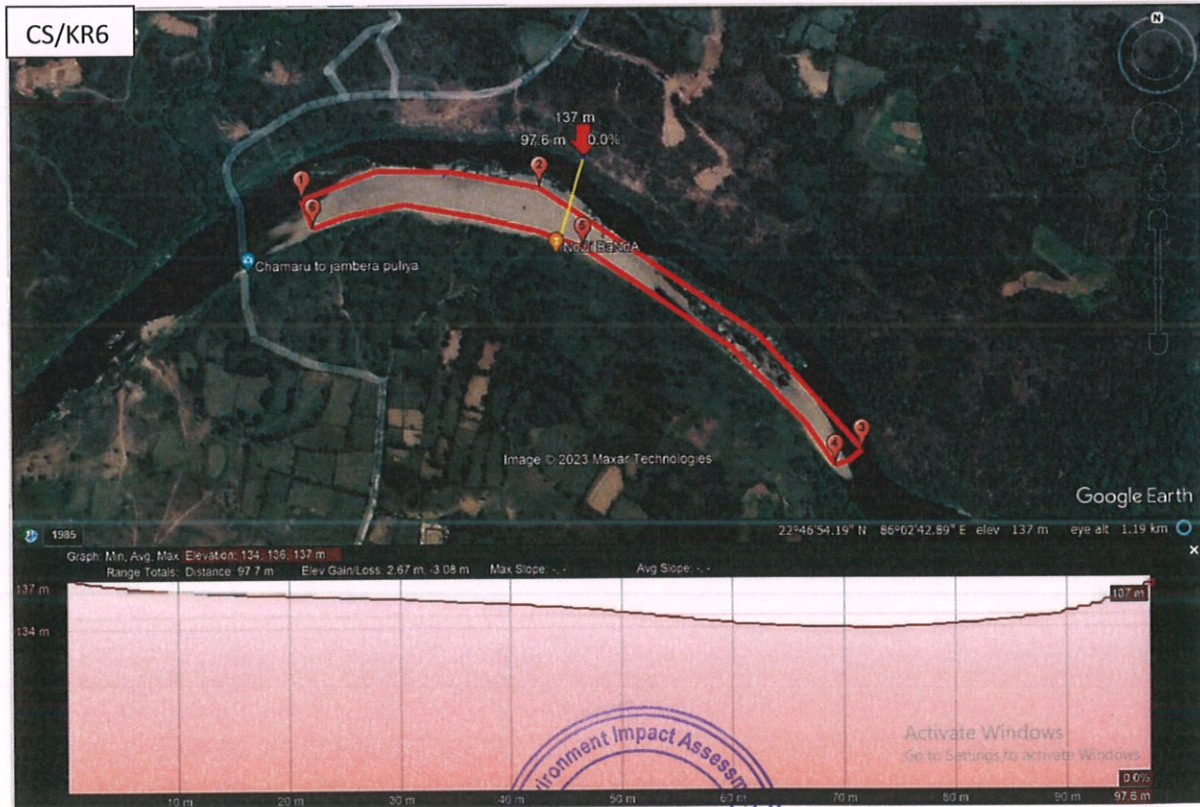
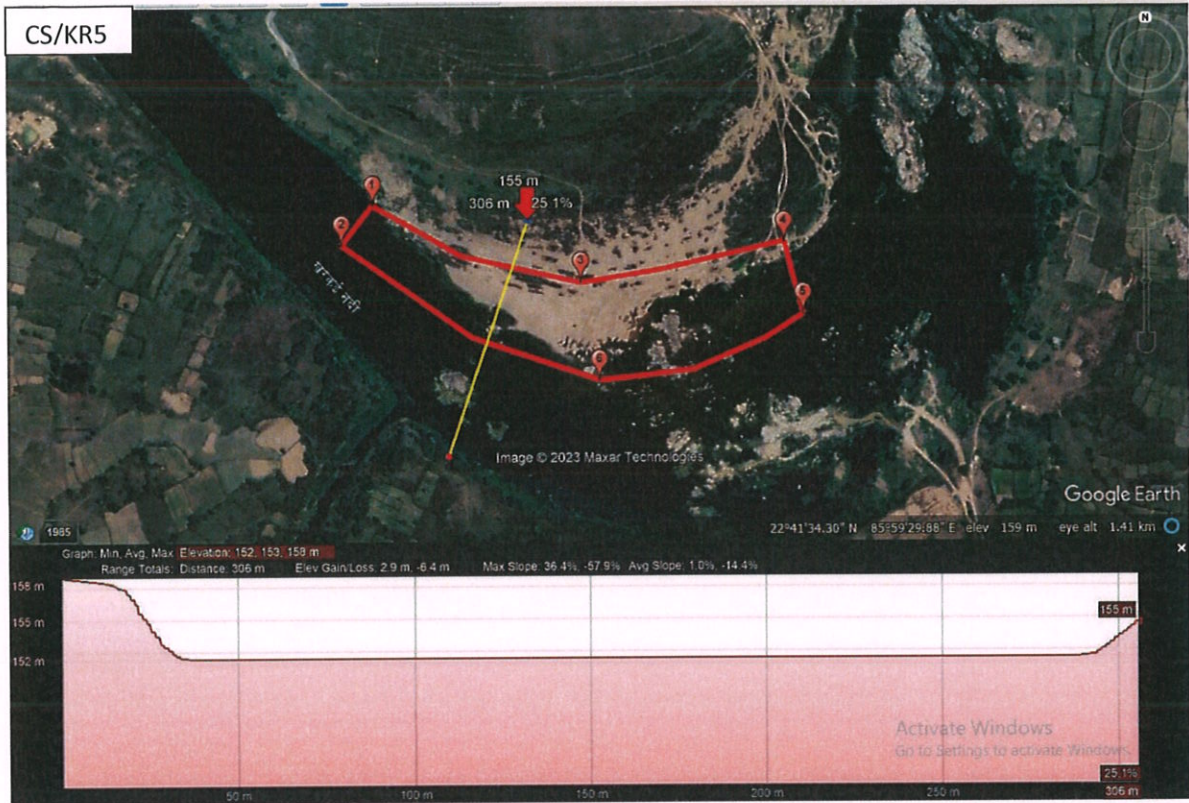


Approved
 State Level Environment Impact Assessment Authority
 Jharkhand, Ranchi

Atmos Sustainable Solutions
 PVT. LTD.

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District Survey Report Saraikela-Kharsawan, January-2023



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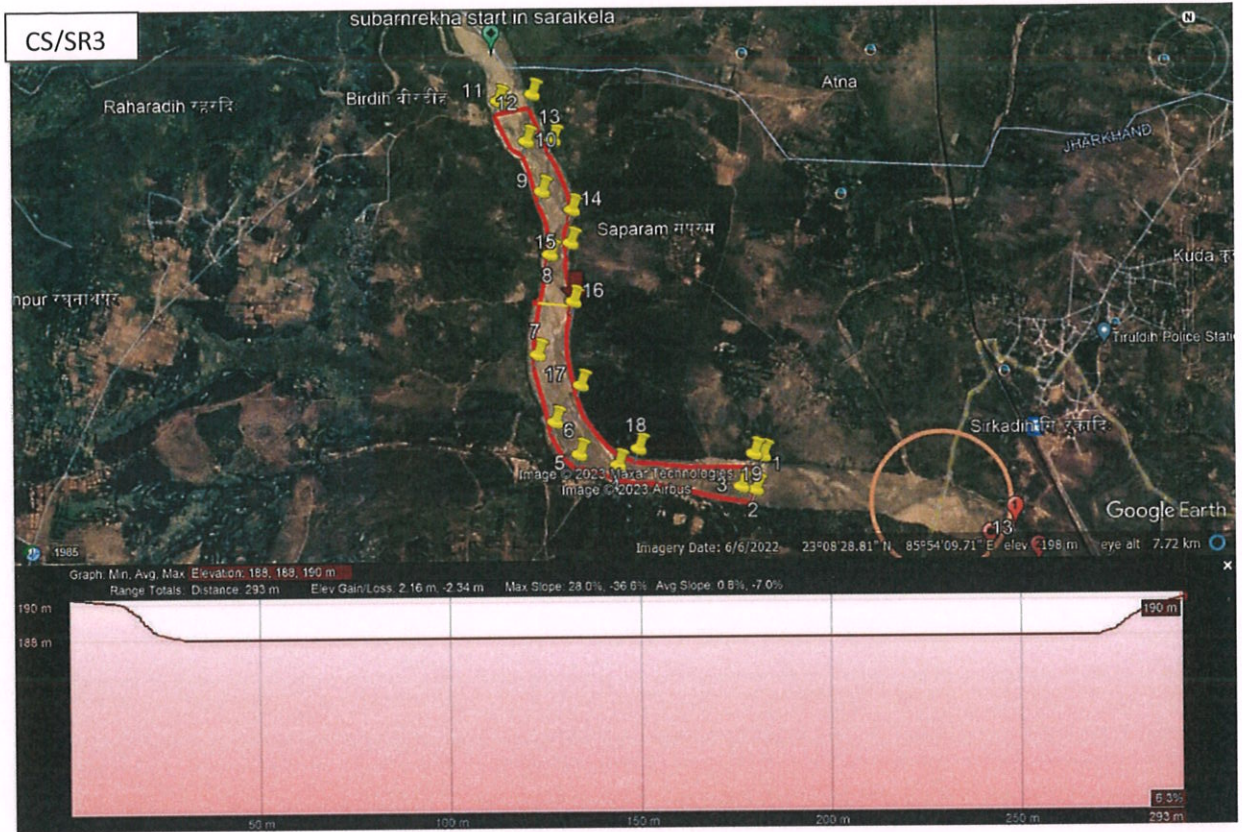
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District Survey Report Saraikela-Kharsawan, January-2023



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CHAPTER- 20

PROCESS OF DEPOSITION OF SEDIMENTS IN THE RIVERS OF THE DISTRICT

Sediment refers to the conglomerate of materials, organic and inorganic, that can be carried away by water, wind or ice. While the term is often used to indicate soil-based, mineral matter (e.g. clay, silt and sand), decomposing organic substances and inorganic biogenic material are also considered sediment. Most mineral sediment comes from erosion and weathering, while organic sediment is typically detritus and decomposing material such as algae. Sediment particles come in different sizes and can be inorganic or organic in origin. These particulates are typically small, with clay defined as particles less than 0.00195 mm in diameter, and coarse sand reaching up only to 1.5 mm in diameter. However, during a flood or other high flow event, even large rocks can be classified as sediment as they are carried downstream. Sediment is a naturally occurring element in many bodies of water, though it can be influenced by anthropogenic factors.

In an aquatic environment, sediment can either be suspended (floating in the water column) or bedded (settled on the bottom of a body of water). In other words, waterflow tries to scour its surface whenever it flows in the channel. Silt or gravels even larger boulders are detached from its bed or banks. The moving water sweeps these detached particles in downstream along its flow. Silting and scouring is not very uncommon and must be avoided by proper designs. It reduces supply level of water. The channel section gets reduced by silt and reduces discharging capacity. Sediments seriously threaten various projects due to silt carried out by rivers up to point of interceptions. Sediment is also threatening denudation of forests. Sediment is a major obstruction on the flow line. It shortens longevity of channel. It causes soil erosion. Therefore data base must be needed for policy making and planning.

The mineral potential is calculated based on field investigation and geology of the catchment area of the river/ streams. As per the policy of the State and location, depth of minable mineral is defined. The area for removal of mineral in a river or stream can be decided depending on geomorphology and other factors, it can be 50% to 60% of the area of a particular river/stream, e.g. in river mineral constituents like sand up to a depth of three meter are considered as resource mineral. Other constituents like clay and silt are excluded as waste while calculating the mineral potential of particular river/ stream.

The specific gravity of each mineral constituent is different. The percent of mineral constituent like boulder, river Bajri, and sand also varies for different river and streams. While calculating the mineral potential, the percentage of each mineral constituent is taken as 25-30% for sand and 5- 10% for silt and clay.

The quantum of deposition varies from stream to stream depending upon factors like catchment lithology, discharge, river profile and geomorphology of the river course.



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There are certain geo- morphological features developed in the river beds such as channel bar, point bar etc. where annual deposition is more even two to three meters.

PROCESS OF DEPOSITION:

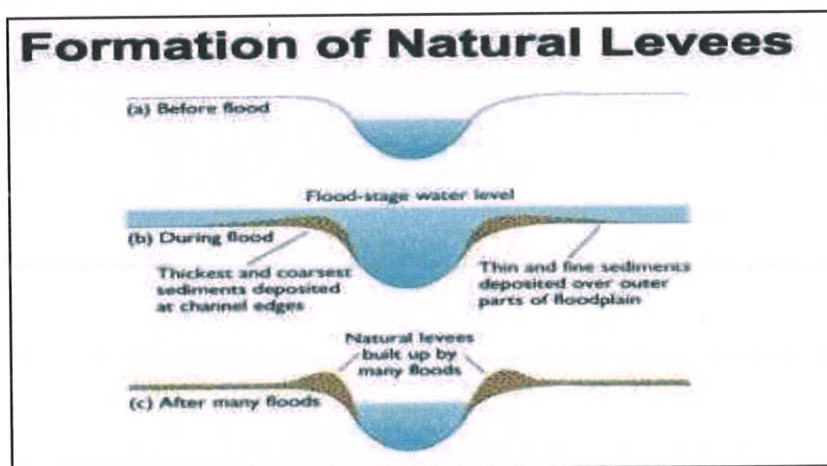
Sediment is a naturally occurring material that is broken down by processes of weathering and erosion, and is subsequently transported by the action of wind, water and/or by the force of gravity acting on the particles. Sediments are most often transported by water. Sediment is transported based on the strength of the flow that carries it and its own size, volume, density, and shape. Stronger flows will increase the lift and drag on the particle, causing it to rise, while larger or denser particles will be more likely to fall through the flow.

Deposition is the processes where material being transported by a river is deposited. Deposition occurs when a river loses energy. This can be when a river enters a shallow area (this could be when it floods and comes into contact with the flood plain) or towards its mouth where it meets another body of water.

Deposition is the geological process in which sediments, soil and rocks are added to a landform or land mass. Wind, ice, and water, as well as sediment flowing via gravity, transport previously eroded sediment, which, at the loss of enough kinetic energy in the fluid, is deposited, building up layers of sediment.

Rivers flood on a regular basis. The area over which they flood is known as the floodplain and this often coincides with regions where meanders form. Meanders support the formation of flood plainsthrough lateral erosion.

When river floods the velocity of water slows. As the result of this the river's capacity to transport material is reduced and deposition occurs. This deposition leaves a layer of sediment across the whole floodplain. After a series of floods, layers of sediment form along the floodplain.



Formation of Natural Levees Due to Floods

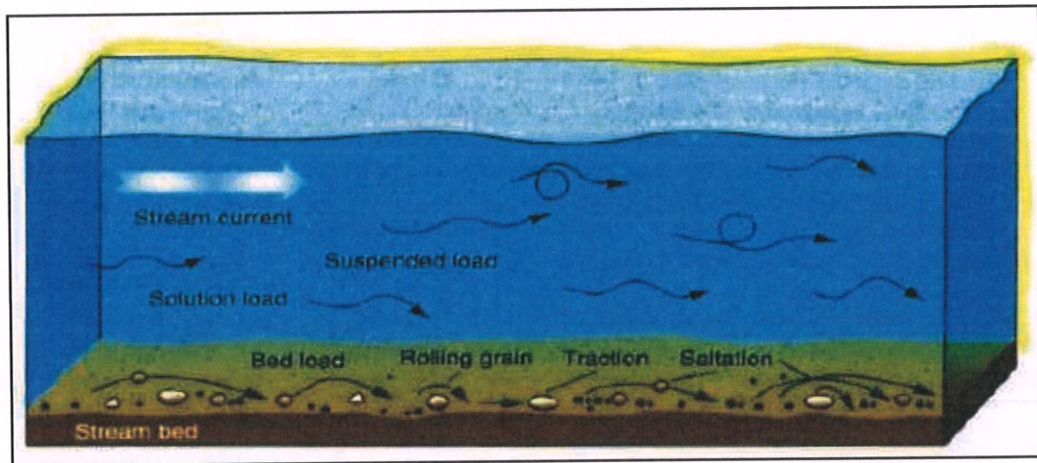


MODES OF SEDIMENT TRANSPORT:

The sediment load of a river is transported in various ways although these distinctions are to some extent arbitrary and not always very practical in the sense that not all of the components can be separated in practice:

- ✓ Dissolved load
- ✓ Suspended load
- ✓ Intermittent suspension (saltation) load
- ✓ Wash load
- ✓ Bed load

Methods of Sediment Transport in Stream



The sand deposits being an integral part of the dynamic river system to which it belongs. Therefore, as a part of natural cycle, the monsoon flow of every river carries with it replenishment of silt and washed out soil and clay from upstream areas in the catchment. This silt shall be removed during the sieving of sand before it is loaded into truck/tipper/trailer to carry to the consumers.

Sand mining is critical to infrastructure development around the globe. Sand is an essential minor mineral used extensively across the country as a useful construction constituent and variety of other uses in sports, agriculture, glass making (a form of sand with high silica content) etc. The rivers are the most important source of Sand. It acts as source of transportation and deposition of sand etc.



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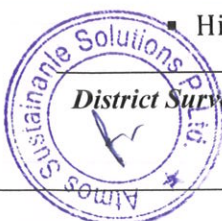
ANNUAL REPLENISHMENT OF MINERAL IN RIVER BED AREA/ SEDIMENTATION:

The deposition in a river bed is more pronounced during rainy season although the quantum of deposition varies from stream to stream depending upon numbers of factors such as catchment, lithology, discharge, river profile and geomorphology of the river course where annual deposition is one meters, but it is noticed that during flood season whole of the pit so excavated is completely filled up and as such the excavated area is replenished with new harvest of minerals.

In order to calculate the mineral deposits in the stream beds, the mineral constituents have been categorized as clay, silt, sand, Bajri and boulder. However, during present calculation, the waste material i.e. silt which varies from 10 to 20% in different streams has also been included in the total production. Further, the Survey of India Topo-Sheets has been included in the total production. Further, the Survey of India Topo-Sheets has been used as base map to know the extent of river course. The mineral reserves have been calculated only upto 0.3-1.0-meter depth although there are some portions in the river beds such as channel bars, point bars and central islands where the annual deposition is raising the level of river bed thus causing shifting of the rivers towards banks resulting in to cutting of banks and at such locations, removal of this material upto the bed level is essential to control the river flow in its central part to check the bank cutting. While calculating the mineral potentials, the mineral deposits lying in the sub-tributaries of that particular stream/river has not been taken into consideration. Since these mineral deposits are adding annually.

Sedimentation is generally considered by geologists in terms of the textures, structures, and fossil content of the deposits lay down in different geographic and geomorphic environments. The factors which affect the "Computation of Sediment":

- Geomorphology & Drainage Pattern: The following geomorphic units plays important role:
- Structural Plain
 - Structural Hill
 - Structural Ridge
 - Denudation Ridge & Valley
 - Plain & Plateau
 - Highly Dissected pediment



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- Undissected pediment

- Distribution of Basin Area River wise
- Drainage System/Pattern of the area, Rainfall & Climate: Year wise Rainfall data

REPLENISHMENT STUDY:

The need for replenishment study for river bed sand is required in order to nullify the adverse impacts arising due to excess sand extraction. Mining within or near riverbed has a direct impact on the stream's physical characteristics, such as channel geometry, bed elevation, substratum composition and stability, in-stream roughness of the bed, flow velocity, discharge capacity, sediment transport capacity, turbidity, temperature etc. Alteration or modification of the above attributes may cause an impact on the ecological equilibrium of the riverside regime, disturbance in channel configuration and flow-paths. This may also cause an adverse impact on in stream biota and riparian habitats.

The effects of sediment replenishment are investigated for cross section bed deposition, flow velocity, grain size distribution, water quality and organisms.

METHODOLOGY ADOPTED FOR REPLENISHMENT STUDY:

The methodology adopted for the study is an integrated approach involving:

- 1) Field data collection** followed by cross section survey over the sections of fixed intervals along the river showing river bed material (RBM) with present elevations.
- 2) Remote sensing** was used for identification of watershed area relevant to the mine lease along the river at different coordinates.
- 3) Estimation of catchment yield and bed load transport:** The catchment yield has been computed using the Strange's runoff method for the runoff coefficient. The Iso-pluvial maps of IMD have been used for estimation of catchment yield and peak flood discharge for the study area by various methods like Dickens, Jarvis, and Rational formula at 25, 50 and 100 years return period.



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ESTIMATION OF CATCHMENT YIELD:

The replenishment estimation is based on a theoretical empirical formula with the estimation of bed load transport comprising of analytical models to calculate the replenishment estimation. The iso-pluvial maps of IMD can be used for estimation of rainfall. Catchment yield is computed using different standard empirical formulas relevant to the geographical and channel attributes.

STRANGE'S RUN-OFF:

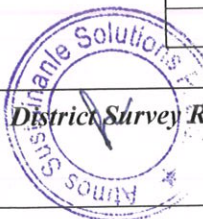
Strange's Monsoon runoff curves for runoff coefficient). Peak flood discharge for the study area can be calculated by using Dickens, Jarvis and Rational formula at 25, 50 and 100 years return period. The estimation of bed load transport using Ackers and White Equation is made. For estimation of surface run off coefficient, we considered a particular value of peak rainfall.

The dependability has been calculated on the basis of last 24 years rainfall, where water availability has been considered for arriving at 50% dependability.

In absence of non-availability, peak storm water has been estimated as under:

Rainfall Data (Arranged in Descending Order, Mentioning Serial Number /Order Number m) of each Year's Rainfall

Sr. No. i.e. Order Number (m)	Rainfall in Descending Order (in mm)
1	1434.3
2	1351.6
3	1329.4
4	1249
5	1196.3
6	1190.9
7	1156.1
8	1153.1
9	1098.4
10	1021.4
11	993.4
12	992.4
13	980.25
14	957.9
15	944.8
16	906



17	901
18	873.5
19	834.4
20	790.8
21	770.4
22	738.1
23	728.3
24	463.2

Calculation of Order Number (m)

	Rainfall Dependability Percentage
	p=50%
m=	$N \times p/100$
	N= 24, p = 50
m=	12

Here,

m = Order number

N = the available rainfall data of the past N years is first of all arranged in the descending order of magnitude

p = Dependability percentage

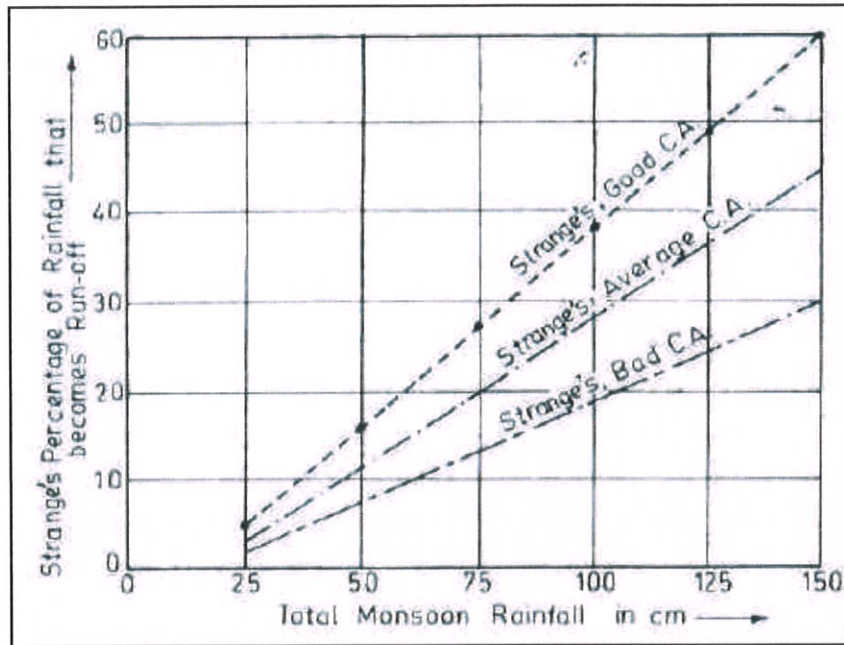
The rainfall value tabulated above in Table, the **Order No. 12** has the values of 992.4 mm. So, P50% = 99.24cm

Average value of Strange's Run off percentage is calculated from Strange's monsoon rainfall-runoff curves considering the catchment area as good and the Runoff % for the area is:

Runoff % at 50% dependability of rainfall = 20%



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Strange's Monsoon Rainfall-runoff Curves

• **DANDY - BOLTON EQUATION**

Dandy Bolton formula is often used to calculate the sedimentation yield. It provide a quick, rough approximation of mean sediment yields on a regional basis for preliminary watershed planning. Computed sediment yields normally would be low for highly erosive areas and high for well stabilized drainage basins with high plant density because the equations are derived from average values. The equations express the general relationships between sediment yield, runoff, and drainage area. Many variables influence sediment yield from a drainage basin. They include climate, drainage area, soils, geology, topography, vegetation and land use. The effect of any of these variables may vary greatly from one geographic location to another, and the relative importance of controlling factors often varies within a given land resource area

Runoff data are translated to inches per year per unit area and sediment deposition data to tons per year per square mile of net drainage area. Net drainage area is defined as the sediment-contributing area and normally excluded areas above upstream reservoirs or other structures that were effective sediment traps.



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Combined effect of drainage area and run off on sediment yield

Dandy- Bolton determined the combined influence of runoff and drainage area on sediment yield to compute the sediment yield. They developed two equations i.e. for run off less than 2 inch and for run off more than 2 inch, which are given below:-

For run off less than 2 inches

$(Q < 2 \text{ in}) S = 1280 * (Q)^{0.46} * [1.43 - 0.26 \text{ Log } (A)]$

For run off more than 2 inches

$(Q > 2 \text{ in}): S = 1958 * (e^{-0.055 * Q}) * [1.43 - 0.26 \text{ Log } (A)]$

Where: S = Sediment yield (M. tons/sq. miles/yr)

Q = Mean Annual runoff (mm)

A = Net drainage area in sq. mile

S.no	Factors		Probable Replenishment
KHARKAI RIVER			
i	Catchment Area (sq. km)	2.15 sq. km	116.51 Metric tons / sq. km /year 250.49 M. ton/year
ii	Mean Annual Runoff	992.4 mm	
*Sediment yield formula $(Q > 2 \text{ in}): S = 1958 * (e^{-0.055 * Q}) * [1.43 - 0.26 \text{ Log } (A)]$: here: Q = Mean Annual runoff (mm)= 992.4 A = Catchment Area= 2.15 sq. km Sediment yield S= (Metric tons / sq. km /year)			
SUBARNAREKHA RIVER			
i	Catchment Area (sq. km)	3.99 sq. km	110.9 Metric tons / sq. km /year 442.5 M. ton/year
ii	Mean Annual Runoff	992.4 mm	
*Sediment yield formula $(Q > 2 \text{ in}): S = 1958 * (e^{-0.055 * Q}) * [1.43 - 0.26 \text{ Log } (A)]$: here: Q = Mean Annual runoff (mm)= 992.4 A = Catchment Area= 3.99 sq. km Sediment yield S= (Metric tons / sq. km /year)			
*Source:- Calculation of sediment yield by the Dandy-Bolton formula ponce.sdsu.edu/onlinedendybolton.php			



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SEDIMENT YIELD OF THE RIVER

River	Mean Annual Run-off (mm)	Net Catchment Area (Sq. km)	Sediment Yield (M. tons / sq. km / year)
Kharkai River	992.4	2.15	116.51
Subarnarekha River		3.99	110.9
Total		6.14	227.41

VOLUME ESTIMATION OF REPLENISHED MATERIAL FOR RESPECTIVE POTENTIAL AREA:

Physical Survey of Study Areas: Field Survey has been done by going through following stages given below which includes data acquisition related to elevation profiles for particular sandghats with the help of DGPS Survey, Garmi eTrex 10 GPS and meter stick for the collection of data related to elevation and measurement of depth for specific locations, respectively. The surface plan with sections has been made with the help of E-Survey CAD, GIS, Global Mapper and AutoCAD softwares. The cross-section surveys have been done across the river at the places on 10x10 m grid ground levels are given in **Annexure**.

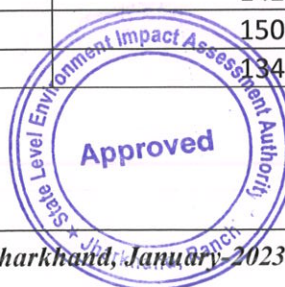
Following stages are given below on temporal basis for field survey:

1) Primary Data Collection: Although, field data collection is an integral part of DSR. The pre-monsoon data has been collected from District Mining Office, Saraikela-Kharsawa and same has been validated from satellite imaginary map.

RIVER NAME: KHARKHAI RIVER		
UIN SAND BAR CODE	AREA IN SQM	AVG. INITIAL LEVEL IN AMSL
SRK_KR_PRE_01	375056	208.61
SRK_KR_PRE_02	261832	204.27
SRK_KR_PRE_03	435782	203.01
SRK_KR_PRE_04	110793	184.04
SRK_KR_PRE_05	169849	157.10
SRK_KR_PRE_06	185433	155.72
SRK_KR_PRE_07	247554	143.53
SRK_KR_PRE_08	89693	140.20
SRK_KR_PRE_09	40618	142.14
SRK_KR_PRE_10	75864	150.83
SRK_KR_PRE_11	158017	134.47



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RIVER NAME: SUBARNAREKHA RIVER		
UIN SAND BAR CODE	AREA IN SQM	AVG. INITIAL LEVEL IN AMSL
SRK_SR_PRE_01	159271	125.37
SRK_SR_PRE_02	238709	128.35
SRK_SR_PRE_03	306176	136.26
SRK_SR_PRE_04	436849	143.49
SRK_SR_PRE_05	218407	146.72
SRK_SR_PRE_06	169241	148.98
SRK_SR_PRE_07	2461571	185.45

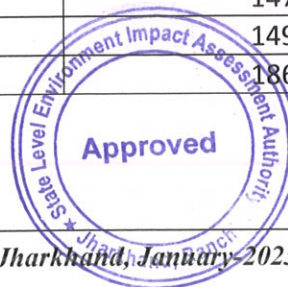
2) The second survey is at the time of closing of mines for monsoon season, this survey provides the quantity of the material excavated before the offset of monsoon (**As per MOEFF & CC 2020**). Second survey had been done in Novemeber-2022 to January-2023 with the help of DGPS and used in different software such as E-Survey, Auto Cad, Remote Sensing.

RIVER NAME: KHARKAI RIVER		
UIN SAND BAR CODE	AREA IN SQM	AVG. INITIAL LEVEL IN AMSL
SRK_KR_POS_01	375057	208.80
SRK_KR_POS_02	261834	204.68
SRK_KR_POS_03	435786	203.21
SRK_KR_POS_04	110795	184.41
SRK_KR_POS_05	169852	157.73
SRK_KR_POS_06	185437	156.35
SRK_KR_POS_07	247558	143.67
SRK_KR_POS_08	89694	140.48
SRK_KR_POS_09	40620	142.85
SRK_KR_POS_10	75867	151.74
SRK_KR_POS_11	158018	135.01

RIVER NAME: SUBARNAREKHA RIVER		
UIN SAND BAR CODE	AREA IN SQM	AVG. INITIAL LEVEL IN AMSL
SRK_SR_POS_01	159275	125.49
SRK_SR_POS_02	238711	128.61
SRK_SR_POS_03	306177	136.39
SRK_SR_POS_04	436852	143.77
SRK_SR_POS_05	218409	147.01
SRK_SR_POS_06	169243	149.28
SRK_SR_POS_07	2461575	186.38



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3) The third survey needs to be carried out after the monsoon period to know the quantum of material deposited/replenished in the mining lease.

Third survey have not completed so the third survey of sand ghat will be done April-2023

4) The fourth survey at the end of March to know the quantity of material excavated during the financial year.

Fourth survey have not completed so the fourth survey of sand ghat will be done in March-2024

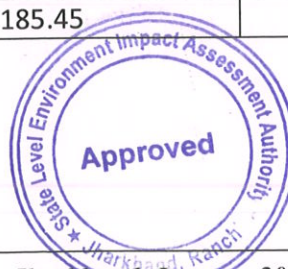
Comparison between Avg. Residual Level and Avg. Increased Level

Comparison between Initial Level and After Erosion Increased Level

Sand Bar Code	AMSL Observed (Pre monsoon)	AMSL Observed (Post monsoon)
KHARKAI RIVER		
SRK_KR_PRE_01	208.61	208.80
SRK_KR_PRE_02	204.27	204.68
SRK_KR_PRE_03	203.01	203.21
SRK_KR_PRE_04	184.04	184.41
SRK_KR_PRE_05	157.10	157.73
SRK_KR_PRE_06	155.72	156.35
SRK_KR_PRE_07	143.53	143.67
SRK_KR_PRE_08	140.20	140.48
SRK_KR_PRE_09	142.14	142.85
SRK_KR_PRE_10	150.83	151.74
SRK_KR_PRE_11	134.47	135.01
SUBARNAREKHA RIVER		
SRK_SR_PRE_01	125.37	125.49
SRK_SR_PRE_02	128.35	128.61
SRK_SR_PRE_03	136.26	136.39
SRK_SR_PRE_04	143.49	143.77
SRK_SR_PRE_05	146.72	147.01
SRK_SR_PRE_06	148.98	149.28
SRK_SR_PRE_07	185.45	186.38

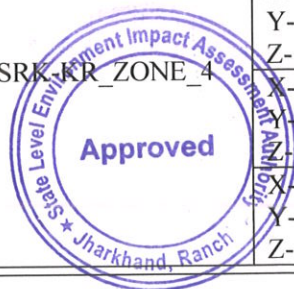


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ZONE WISE DETAILS

NAME OF RIVER	UIN OF SAND BAR	GEO-COORDINATE	AREA IN HA
KHARKAI RIVER	SRK-KR_ZONE_1	X- 22°29'6.63"N Y- 85°57'45.68"E Z- 209M	37.51
		X- 22°29'6.33"N Y- 85°57'42.41"E Z- 208M	
		X- 22°29'40.92"N Y- 85°56'17.64"E Z- 206M	
		X- 22°29'37.88"N Y- 85°56'18.68"E Z- 207M	
KHARKAI RIVER	SRK-KR_ZONE_2	X- 22°30'28.83"N Y- 85°55'17.91"E Z- 207M	26.18
		X- 22°30'31.41"N Y- 85°55'20.89"E Z- 205M	
		X- 22°31'22.95"N Y- 85°54'28.08"E Z- 205M	
		X- 22°31'19.92"N Y- 85°54'23.07"E Z- 203M	
KHARKAI RIVER	SRK-KR_ZONE_3	X- 22°31'23.17"N Y- 85°54'23.96"E Z- 204M	43.58
		X- 22°31'20.95"N Y- 85°54'20.83"E Z- 203M	
		X- 22°32'48.18"N Y- 85°54'28.88"E Z- 204M	
		X- 22°32'46.45"N Y- 85°54'24.86"E Z- 200M	
KHARKAI RIVER	SRK-KR_ZONE_4	X- 22°36'13.36"N Y- 85°54'48.17"E Z- 186M	11.08
		X- 22°36'13.65"N Y- 85°54'45.78"E Z- 187M	
		X- 22°36'31.21"N Y- 85°54'17.00"E Z- 183M	
		X- 22°36'27.83"N Y- 85°54'15.64"E Z- 183M	



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KHARKAI RIVER	SRK-KR_ZONE_5	X- 22°41'36.64"N Y- 85°58'4.83"E Z- 160M	17.00
		X- 22°41'33.96"N Y- 85°58'6.16"E Z- 161M	
		X- 22°41'54.40"N Y- 85°58'44.66"E Z- 160M	
		X- 22°41'56.75"N Y- 85°58'45.39"E Z- 157M	
KHARKAI RIVER	SRK-KR_ZONE_6	X- 22°41'40.68"N Y- 85°59'15.95"E Z- 159M	18.54
		X- 22°41'37.29"N Y- 85°59'15.39"E Z- 159M	
		X- 22°41'36.92"N Y- 85°59'45.48"E Z- 157M	
		X- 22°41'40.77"N Y- 85°59'37.42"E Z- 158M	
KHARKAI RIVER	SRK-KR_ZONE_7	X- 22°42'39.01"N Y- 86° 2'53.20"E Z- 144M	24.76
		X- 22°42'38.05"N Y- 86° 2'54.96"E Z- 142M	
		X- 22°43'40.66"N Y- 86° 3'25.28"E Z- 145M	
		X- 22°43'37.80"N Y- 86° 3'28.99"E Z- 146M	
KHARKAI RIVER	SRK-KR_ZONE_8	X- 22°43'48.58"N Y- 86° 3'43.39"E Z- 139M	8.97
		X- 22°43'46.12"N Y- 86° 3'44.66"E Z- 141M	
		X- 22°44'6.46"N Y- 86° 3'45.59"E Z- 139M	
		X- 22°44'3.80"N Y- 86° 3'43.31"E Z- 144M	
KHARKAI RIVER	SRK-KR_ZONE_9	X- 22°46'42.56"N Y- 86° 2'55.69"E Z- 145M	4.06
		X- 22°46'41.31"N Y- 86° 2'54.55"E Z- 144M	



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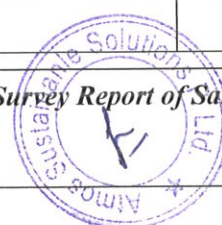
		X-22°46'51.85"N Y- 86° 2'29.85"E Z- 144M	
		X- 22°46'50.53"N Y- 86° 2'30.53"E Z-142M	
KHARKAI RIVER	SRK-KR_ZONE_10	X- 22°45'35.86"N Y- 85°59'42.52"E Z- 155M	7.59
		X- 22°45'34.64"N Y- 85°59'42.55"E Z- 156M	
		X- 22°45'30.73"N Y- 85°58'57.72"E Z- 157M	
		X- 22°45'31.22"N Y- 85°58'56.98"E Z-158M	
KHARKAI RIVER	SRK-KR_ZONE_11	X- 22°45'33.33"N Y- 86° 8'31.49"E Z- 136M	15.80
		X- 22°45'30.05"N Y-86° 8'29.95"E Z- 134M	
		X- 22°45'53.28"N Y- 86° 8'58.27"E Z- 133M	
		X- 22°45'55.10"N Y- 86° 8'53.46"E Z- 134M	
SUBARNAREKHA RIVER	SRK-SR_ZONE_1	X- 22°50'7.46"N Y- 86°10'2.79"E Z- 127M	15.93
		X- 22°50'2.97"N Y- 86° 9'59.15"E Z- 125M	
		X- 22°50'23.17"N Y- 86° 9'33.82"E Z- 125M	
		X- 22°50'19.99"N Y- 86° 9'31.44"E Z- 129M	
SUBARNAREKHA RIVER	SRK-SR_ZONE_2	X- 22°50'9.57"N Y- 86° 8'8.26"E Z- 129M	23.87
		X- 22°50'6.71"N Y- 86° 8'5.16"E Z- 127M	
		X- 22°50'40.30"N Y- 86° 7'51.36"E Z- 129M	
		X- 22°50'37.06"N Y- 86° 7'53.47"E Z- 135M	



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District Survey Report Saraikela-Kharsawan, January-2023

SUBARNAREKHA RIVER	SRK-SR_ZONE_3	X- 22°53'48.06"N Y- 86° 4'34.76"E Z- 136M	30.62
		X- 22°53'46.03"N Y- 86° 4'32.43"E Z- 136M	
		X- 22°53'58.01"N Y- 86° 3'28.62"E Z- 140M	
		X- 22°53'53.01"N Y- 86° 3'27.58"E Z- 139M	
SUBARNAREKHA RIVER	SRK-SR_ZONE_4	X- 22°55'13.70"N Y- 86° 1'5.32"E Z- 144M	43.70
		X- 22°55'7.27"N Y- 86° 1'1.38"E Z- 143M	
		X- 22°56'9.25"N Y- 86° 1'6.03"E Z- 146M	
		X- 22°56'8.00"N Y- 86° 1'11.38"E Z- 144M	
SUBARNAREKHA RIVER	SRK-SR_ZONE_5	X- 22°56'20.74"N Y- 86° 0'59.63"E Z- 147M	21.84
		X- 22°56'19.04"N Y- 86° 0'57.28"E Z- 148M	
		X- 22°57'4.46"N Y- 86° 0'53.19"E Z- 151M	
		X- 22°56'58.48"N Y- 86° 0'53.62"E Z- 146M	
SUBARNAREKHA RIVER	SRK-SR_ZONE_6	X- 22°58'3.42"N Y- 86° 1'28.37"E Z- 150M	16.92
		X- 22°58'1.70"N Y- 86° 1'19.17"E Z- 153M	
		X- 22°57'37.30"N Y- 86° 1'21.16"E Z- 148M	
		X- 22°57'38.68"N Y- 86° 1'16.90"E Z- 148M	
SUBARNAREKHA RIVER	SRK-SR_ZONE_7	X- 23° 5'48.07"N Y- 85°55'51.65"E Z- 182M	246.16
		X- 23° 5'43.51"N Y- 85°55'45.55"E Z- 181M	



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		X- 23° 9'18.12"N Y- 85°53'43.44"E Z- 193M	
		X- 23° 9'21.02"N Y- 85°53'32.59"E Z- 189M	
TOTAL AREA OF ZONE IN HA.			614.07
TOTAL NO OF ZONE			18

NO MINING ZONE DETAILS OF SARAIKELA - KHARSAWAN				
SI. NO.	RIVER NAME	BRIDGE NAME/NEAREST VILLAGE	GEO-CORDINATES	AREA IN HA.
1	KHARKAI RIVER	BANDADIH	1. 22°31'45.50"N 85°53'59.03"E 2. 22°31'51.57"N 85°54'9.37"E 3. 22°30'55.25"N 85°54'43.15"E 4. 22°30'53.08"N 85°54'39.18"E	49.55
2	KHARKAI RIVER	JHARIDIH	1. 22°43'40.39"N 86° 3'22.29"E 2. 22°43'37.34"N 86° 3'29.00"E 3. 22°42'38.90"N 86° 3'0.64"E 4. 22°42'41.42"N 86° 2'53.67"E	45.6
3	KHARKAI RIVER	BIJAY PULIYA	1. 22°45'35.08"N 85°59'8.30"E 2. 22°45'38.68"N 85°59'8.78"E 3. 22°45'36.23"N 85°59'42.86"E 4. 22°45'34.51"N 85°59'42.91"E	9.27



District Survey Report Saraikela-Kharsawan, January-2023

4	SUBARNAREKHA RIVER	SIRKADIH	1. 23° 7'35.85"N 85°55'11.44"E 2. 23° 7'45.08"N 85°55'12.82"E 3. 23° 7'34.92"N 85°55'45.55"E 4. 23° 7'26.24"N 85°55'39.95"E	28.29
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Estimated Executable Quantity as per Replenishment Study
 The executable quantity of River Bed Material (RBM) has been estimated on the basis of data collected from various field surveys which includes premonsoon and post-monsoon period.

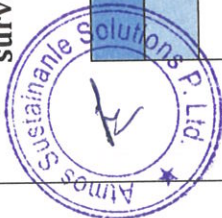
Annual Deposition of Executable River Bed Material (RBM)

KHARKAI RIVER OF SARAIKELA-KHARSAWAN DISTRICT											
PRE MONSOON(APRIL-2022)						POST MONSOON(NOV-DEC2022)					
S.NO	UIN SAND BAR	AMSL	AREA IN SQM	VOLUME IN CUM	UIN SAND BAR	AMSL	AREA IN SQM	THICKNESS OF SAND IN MTR	VOLUME IN CUM	RATE OF REPLENISHMENT IN %	
1	SRK_KR_PRE_01	208.61	375056	51094	SRK_KR_POS_01	208.80	375057	0.19	71261	39.47	
2	SRK_KR_PRE_02	204.27	261832	67095	SRK_KR_POS_02	204.68	261834	0.41	107352	60.00	
3	SRK_KR_PRE_03	203.01	435782	61620	SRK_KR_POS_03	203.21	435786	0.20	87157	41.44	
4	SRK_KR_PRE_04	184.04	110793	25908	SRK_KR_POS_04	184.41	110795	0.37	40994	58.23	
5	SRK_KR_PRE_05	157.10	169849	63883	SRK_KR_POS_05	157.73	169852	0.63	107007	67.50	
6	SRK_KR_PRE_06	155.72	185433	69394	SRK_KR_POS_06	156.35	185437	0.63	116825	68.35	
7	SRK_KR_PRE_07	143.53	247554	26167	SRK_KR_POS_07	143.67	247558	0.14	34658	32.45	
8	SRK_KR_PRE_08	140.20	89693	17326	SRK_KR_POS_08	140.48	89694	0.28	25114	44.95	
9	SRK_KR_PRE_09	142.14	40618	16554	SRK_KR_POS_09	142.85	40620	0.71	28840	74.22	
10	SRK_KR_PRE_10	150.83	75864	36660	SRK_KR_POS_10	151.74	75867	0.91	69039	88.32	
11	SRK_KR_PRE_11	134.47	158017	51539	SRK_KR_POS_11	135.01	158018	0.54	85330	65.56	
			2150491	487240				2150518	215.05	773578	

SUBARNAREKHA RIVER OF SARAIKELA-KHARSAWAN DISTRICT

POST MONSOON(NOV-DEC2022)

PRE MONSOON(APRIL-2022)

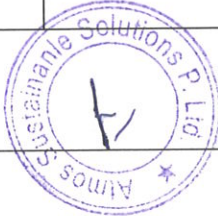


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District Survey Report Saraikela-Kharsawan, January-2023

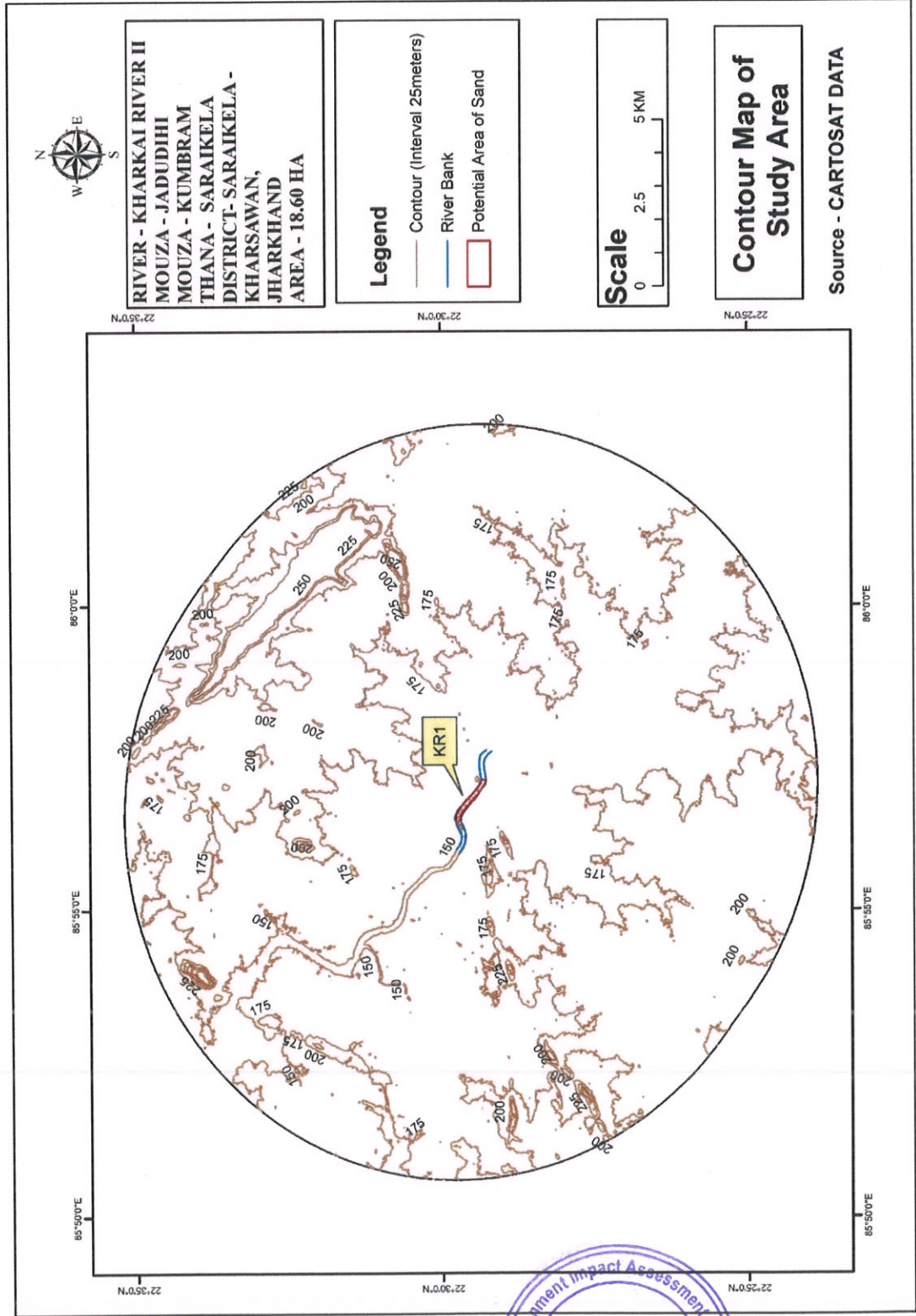
S.NO	UIN SAND BAR	AMSL	AREA IN SQM	VOLUME IN CUM	UIN SAND BAR	AMSL	AREA IN SQM	THICKNESS OF SAND IN MTR	VOLUME IN CUM	RATE OF REPLENISHMENT IN %
1	SRK_SR_PRE_01	125.37	159271	14641	SRK_SR_POS_01	125.49	159275	0.12	19113	30.55
2	SRK_SR_PRE_02	128.35	238709	43073	SRK_SR_POS_02	128.61	238711	0.26	62065	44.09
3	SRK_SR_PRE_03	136.26	306176	28778	SRK_SR_POS_03	136.39	306177	0.13	39803	38.31
4	SRK_SR_PRE_04	143.49	436849	78284	SRK_SR_POS_04	143.77	436852	0.28	122319	56.25
5	SRK_SR_PRE_05	146.72	218407	39587	SRK_SR_POS_05	147.01	218409	0.29	63339	60.00
6	SRK_SR_PRE_06	148.98	169241	31479	SRK_SR_POS_06	149.28	169243	0.30	50773	61.29
7	SRK_SR_PRE_07	185.45	2461571	1206443	SRK_SR_POS_07	186.38	2461575	0.93	2289265	89.75
			3990224	1442285			3990242		399.02	2646676



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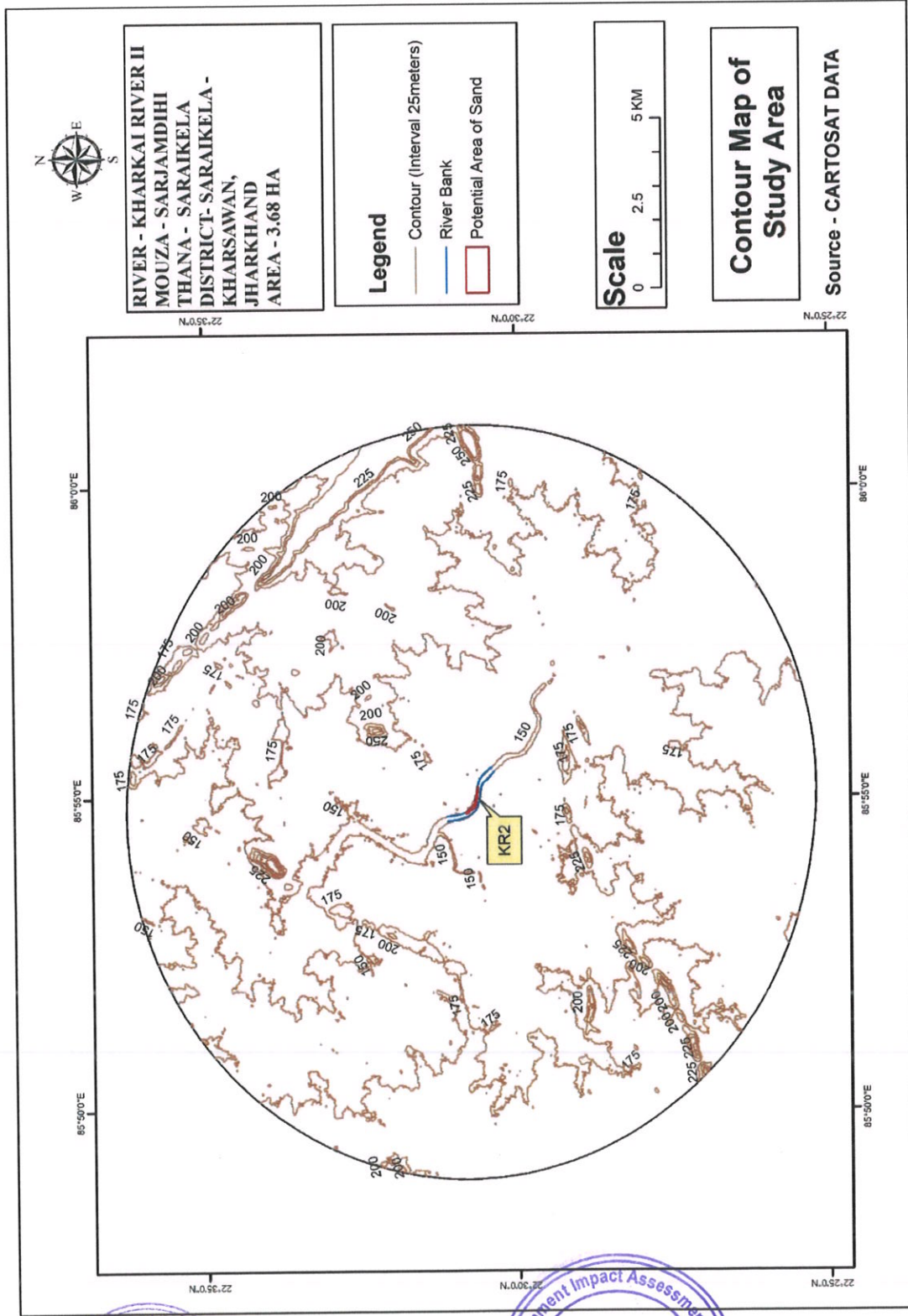


CONTOUR MAP OF PROPOSED POTENTIAL AREA OF SAND DEPOSIT IN 10KM BUFFER ZONE



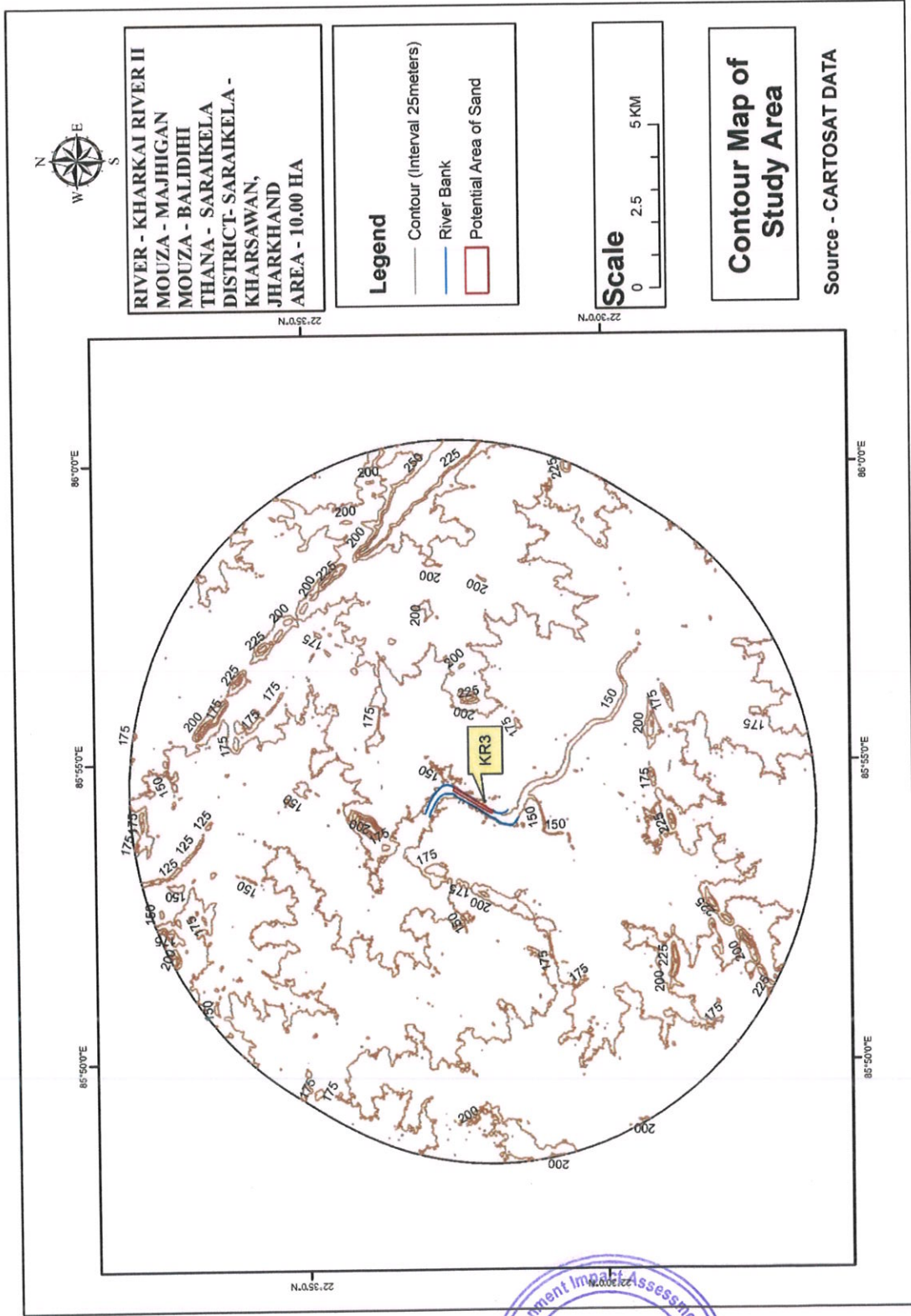
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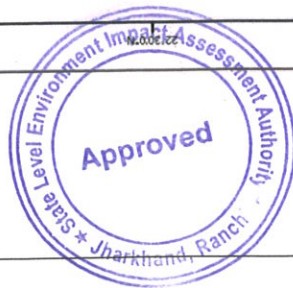


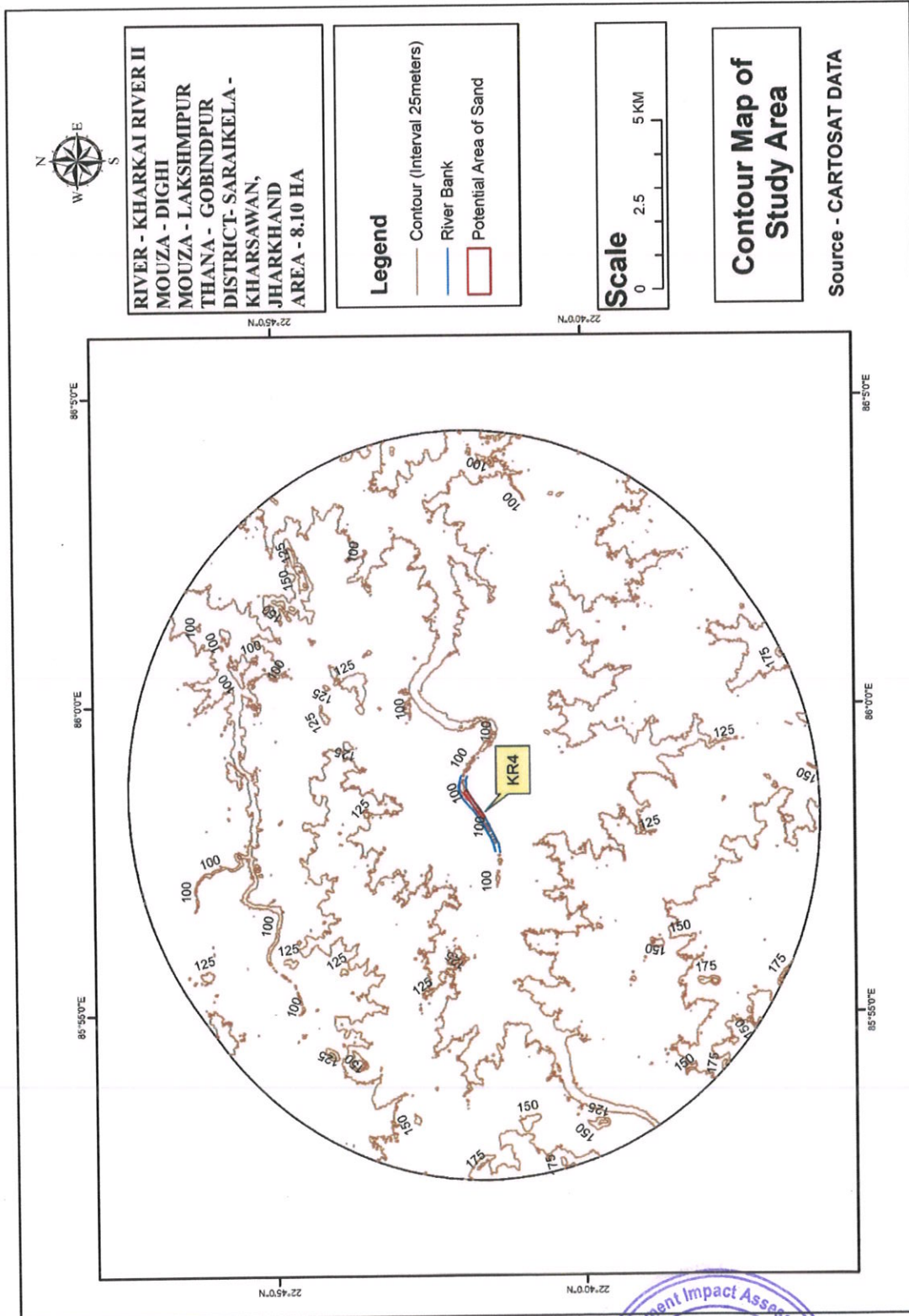
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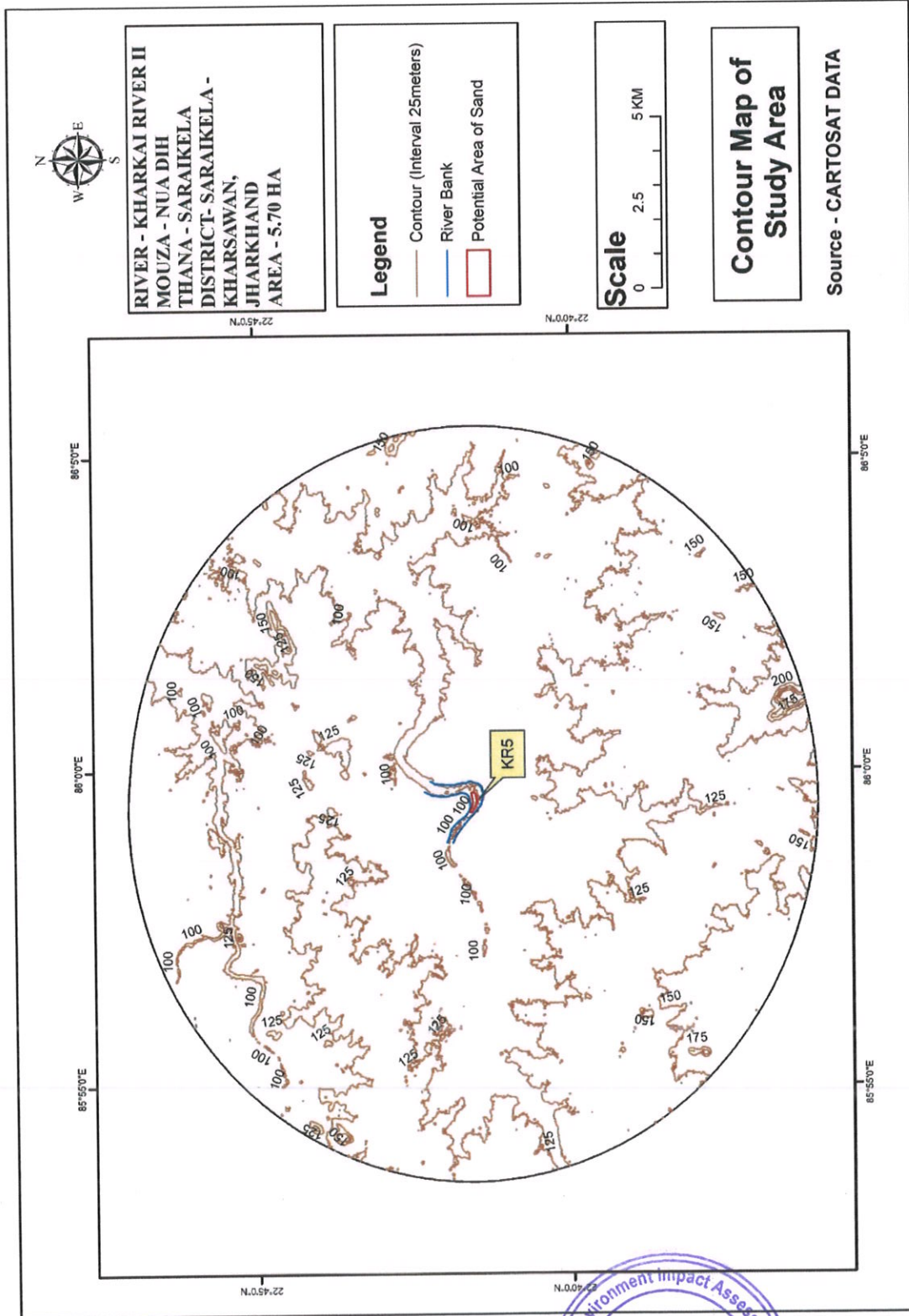




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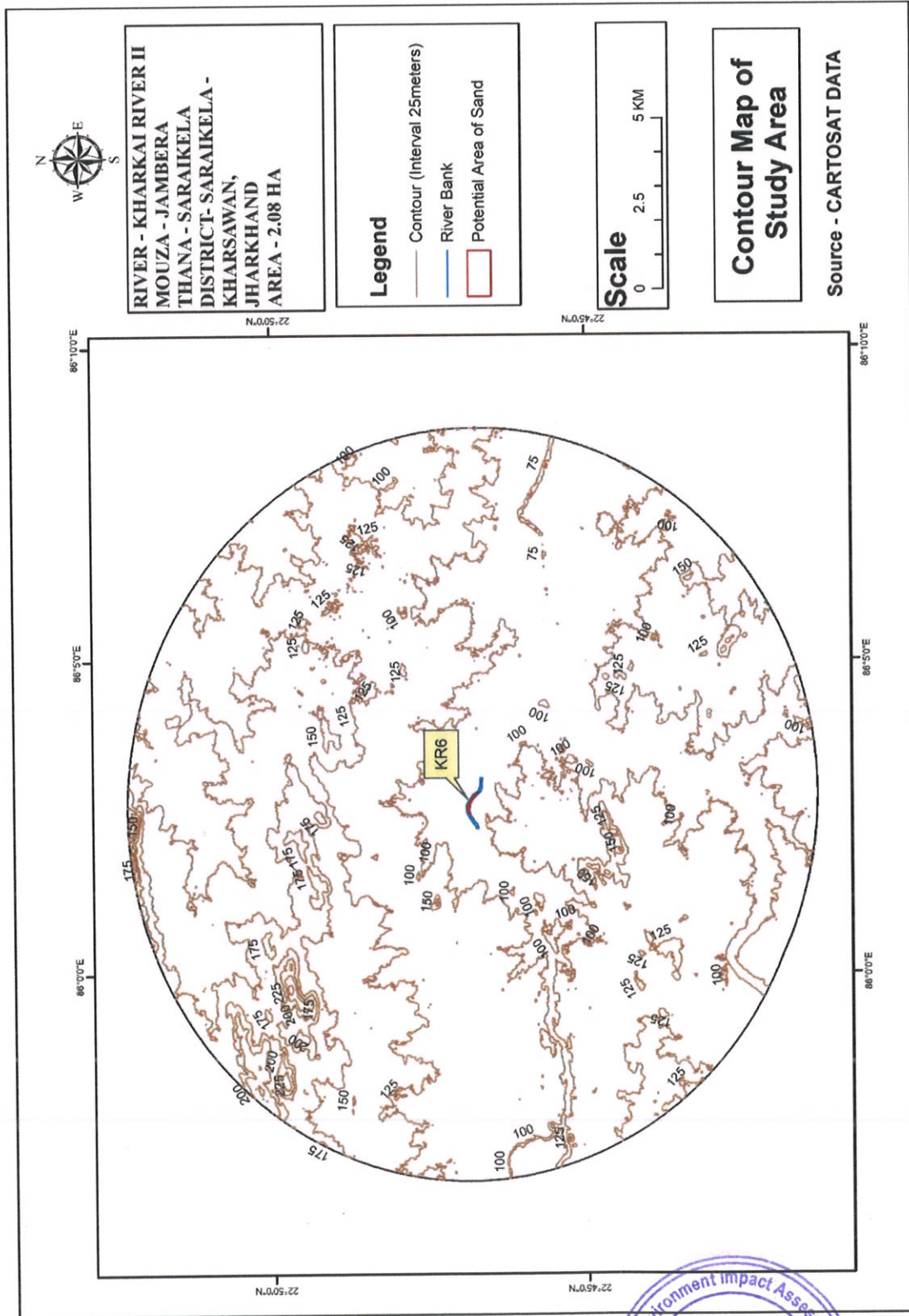






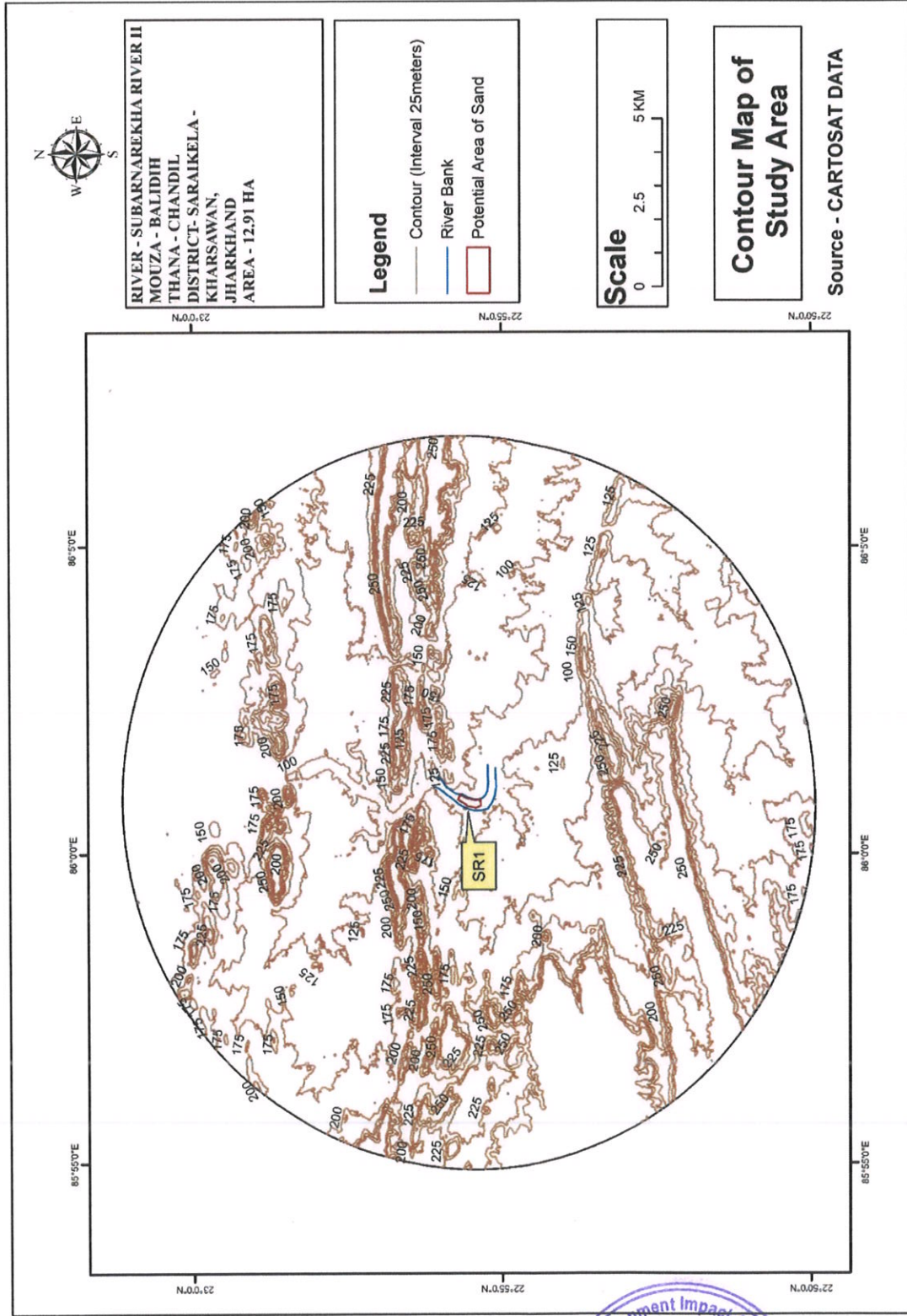
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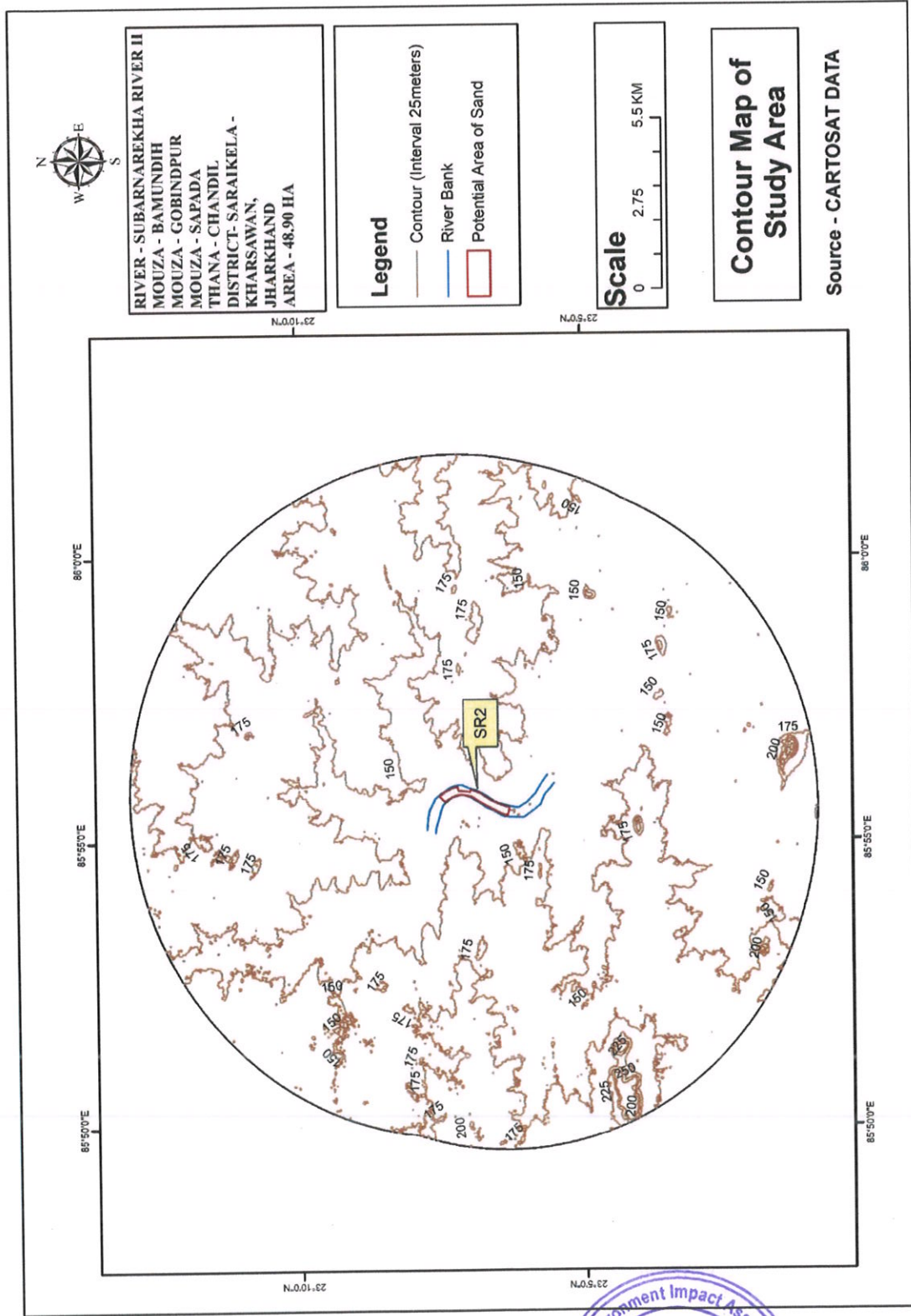




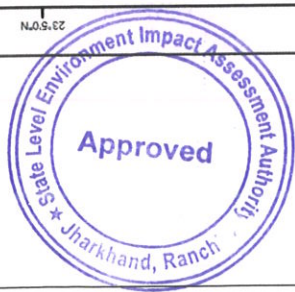
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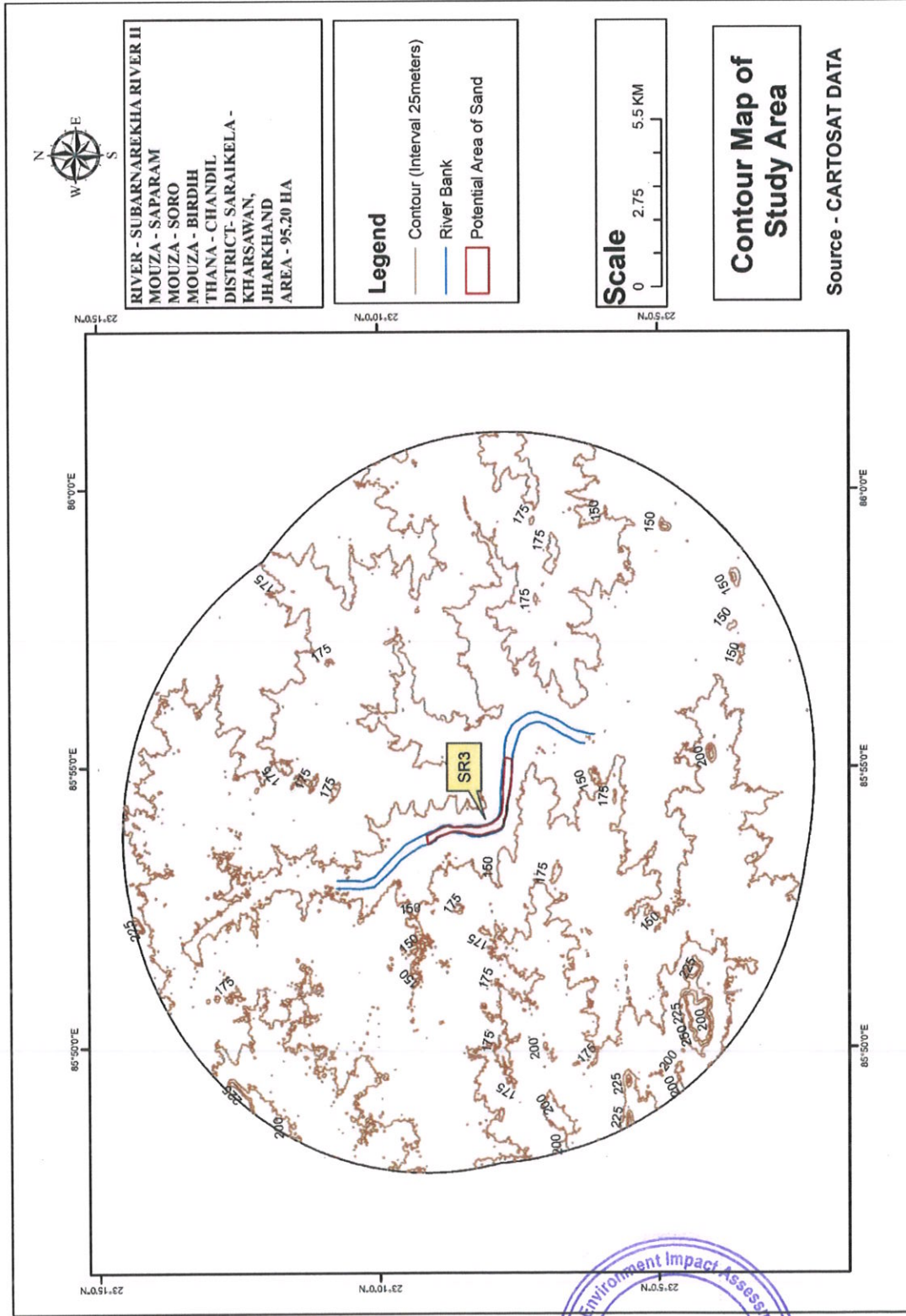






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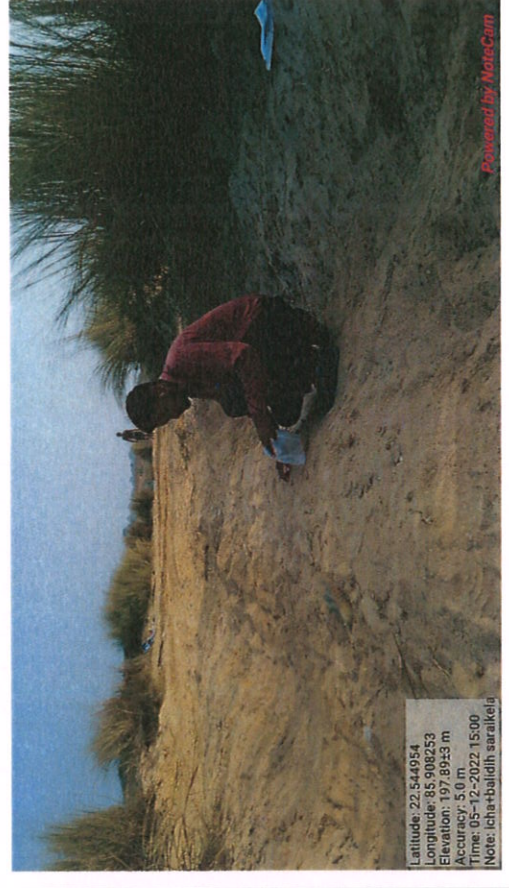
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SITE PHOTOGRAPH OF SAND GHAT



District Survey Report Saraikela-Kharsawan, January-2023



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Approved

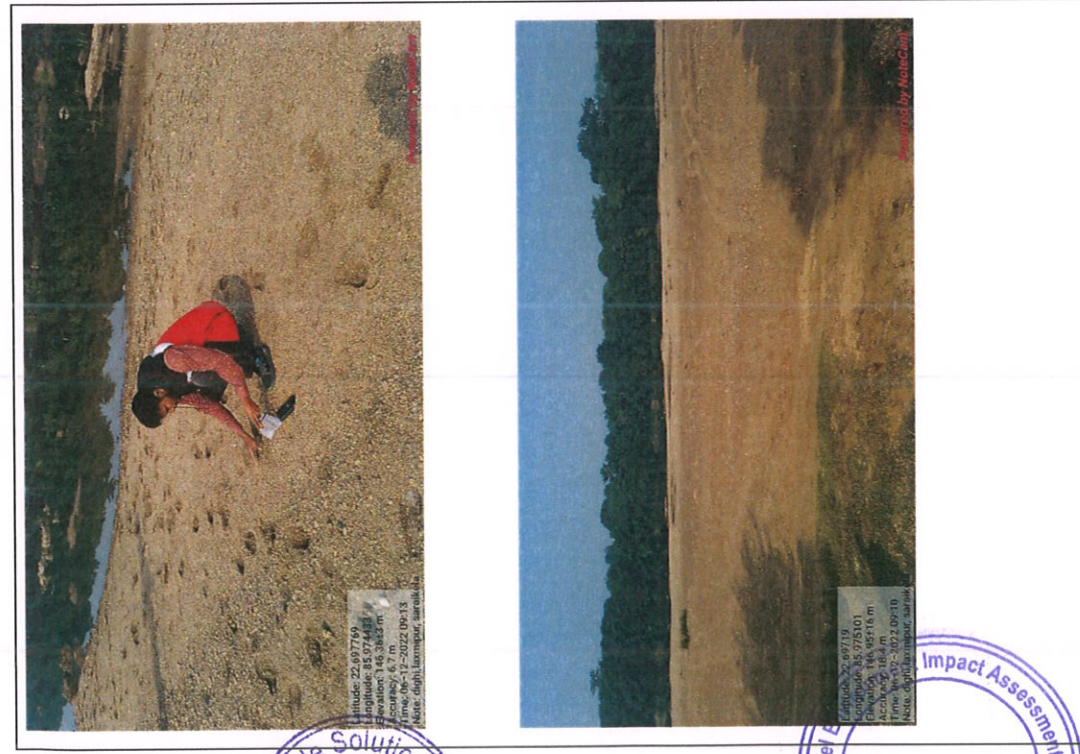


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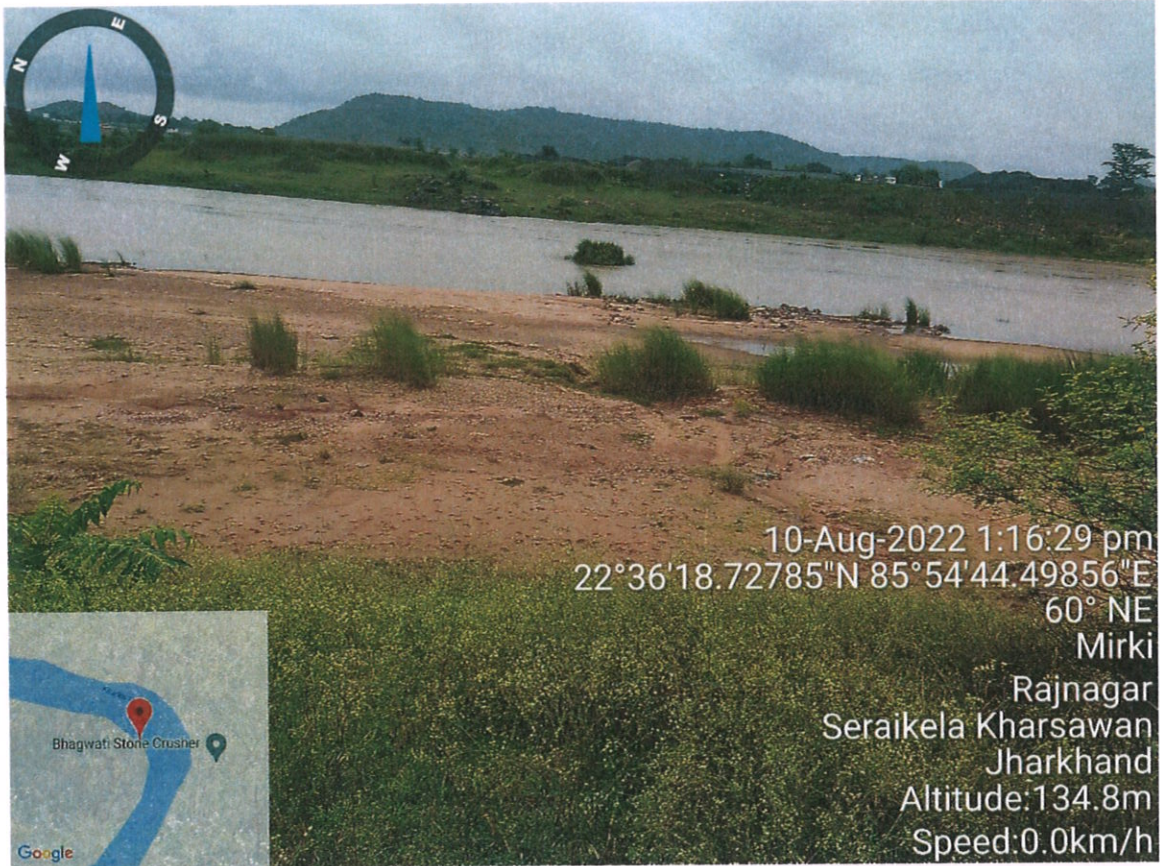
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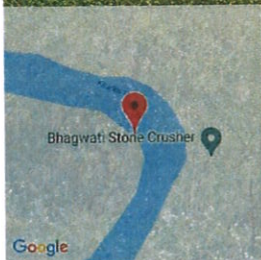


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10-Aug-2022 1:16:29 pm
22°36'18.72785"N 85°54'44.49856"E
60° NE
Mirki
Rajnagar
Seraikela Kharsawan
Jharkhand
Altitude:134.8m
Speed:0.0km/h



10-Aug-2022 3:49:05 pm
22°31'22.52186"N 85°54'31.1184"E
171° S
Unnamed Road
Barajaipur
West Singhbhum
Jharkhand
Altitude:142.9m
Speed:0.0km/h



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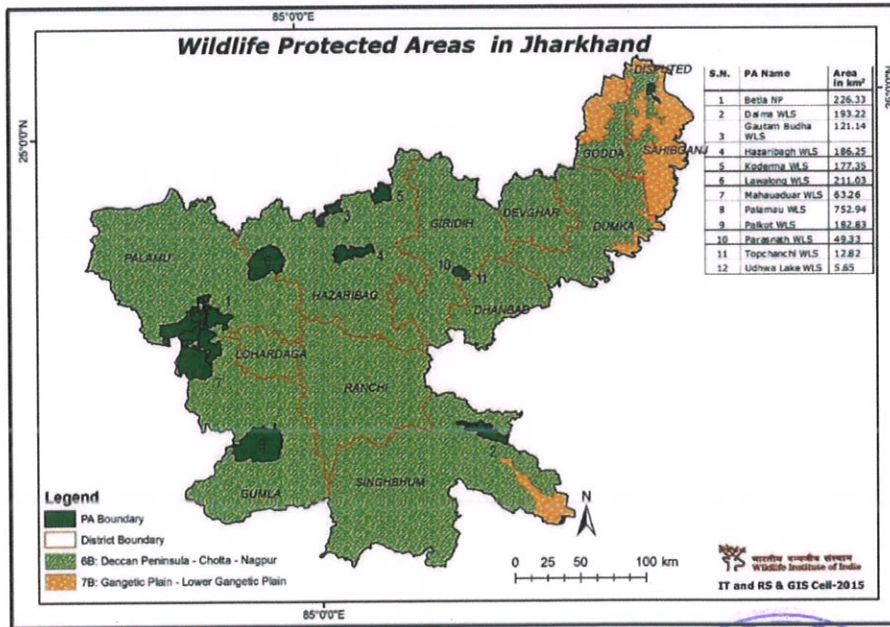
CHAPTER- 21
DETAILS OF ECO-SENSITIVE AREA, IF ANY, IN THE DISTRICT

Dalma Wildlife Sanctuary is bounded by the forests of Dhalbhum and Saraikela Forest Division of Jharkhand and Kansabati Forest Division of West Bengal, Jamshedpur township and Chandil sub divisional town are merely 0 -5 kilometers from the boundary of Dalma Wildlife Sanctuary.

As per the notification, the entire forest zone spread over an area of 522.98 sq.km, housing 85 villages inside the forest and 51 villages on its periphery, has been kept out of bounds for any type of pucca construction.

The area up to five kilometers from the boundary of the protected Dalma Sanctuary constitutes the part of the eco-sensitive zone. The eco-sensitive zone covers an area of 377.89 sq.km that falls in East Singhbhum and another 145.09 sq.km that is in Saraikela-Kharsawan district.

The notification has stipulated that no concrete construction can be undertaken within 300 meter of the sanctuary while no industrial, mining, crushing, wood-based industries, saw mills and such commercial activities would be allowed within the five km radius from the boundary of the sanctuary area.



Wildlife Protected area in Jharkhand



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CHAPTER- 22 IMPACT ON THE ENVIROMENT

(Air, Water, Noise, Soil, Flora & Fauna etc.) Due to mining activity

Impact on Environment due to mining activities varies based on the quantum of production rate proposed. The different activities involved before & during mining are narrated below, which helps to assess the impact on environment.

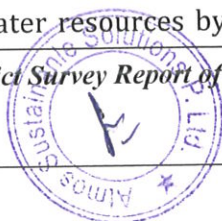
Population growth, economic development and environmental degradation are interlinked with each-other. The high growth in population speeds-up economic activities. Meanwhile, it also deteriorates environment as for the high level of economic development, plenty of natural resources are exploited. Similarly, mining activities have considerable impacts on environment.

Change in flow pattern of river due to river bed mining is one of the significant impacts arising out of sand mining & there may be increase in flow velocity of river. Mining may also cause change in surface water quality and ground water quality.

Air pollution, due to dust from the mines, is a common environmental problem in mines and quarries especially open cast operations. Mining activities are normally associated with different types of pollution. Air pollution is regarded as the most notable one, where particulate matter (dust) are generated and found in the surrounding areas of such activities. Particles with aerodynamic diameters of less than 50 μ m (termed Total Suspended Particulate matter, or TSP) can become suspended in the atmosphere, and those with aerodynamic diameters of less than 10 μ m termed PM10 (inhalable particles) can be transported over long distances, and enter the human respiratory system.

Noise pollution is associated with many types of equipment used in mining operations, but blasting is considered the major source. Loud sound disturbed the vegetable nearby the area. It also affects stability of infrastructures, buildings, and homes of people living near to these working sites. In this regard, noise pollution may include noise from vehicle engines, loading and unloading of rock into steel dumpers, chutes, power generation, and other sources.

Sand Mining operations impact the environment in several ways, and water pollution is a major concern in such operations. For instance quarry dust can change the chemistry of water resources by dissolving in them, it can also settle in water bodies and cause



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pollution. Furthermore, these operations disrupt the existing movement of surface water and groundwater; they interrupt natural water recharge and can lead to reduced quantity and quality of drinking water for residents and wildlife near or downstream from a quarry site.

The pollution potential of the proposed project, it is possible impacts on the surrounding environment during pre-operational and operational phases and the necessary management actions proposed for control and abatement of pollution are furnished here under.

Impact on some component of the environment is as below:

Air environment:

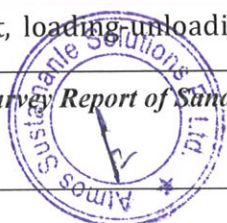
Although mining does not cause any direct change in air environment, transportation etc. In sand mining operations, the source of air pollution may cause deterioration of air quality due to the fugitive dust emission during excavation, loading-unloading operations and transportation. Loading and unloading of mineral would be associated with the fugitive emission in the active area whereas fugitive emission during transportation would affect the areas/villages situated adjacent to road side. Another source of air pollution would be emission from the trucks/tractor/other vehicles to be used for transportation of soil.

Water environment:

As far as impact on surface water is concerned, during mining and transportation, there are chances of contamination of surface water resources (pond, well etc.) with dust or by other means. As sand mining is on bed of river, there may adverse impact on flow pattern, surface hydrology and ground water regime. The labourers working in sand mining come from neighboring districts and colonies in the surrounding areas with inadequate facilities for waste disposal.

Noise environment:

As far as noise pollution is concerned, blasting is considered the major source of noise Pollution but in sand mining there is no provision of blasting. The Machinery used in mining of sand mineral creates sound and vibrates. As well as vehicles used for transport, loading-unloading of mineral etc. put impact on noise environment. Noise



level in the working environment should be compared with the standards prescribed by Central Pollution.

Flora and Fauna:

The sand mining may lead to Short-term disturbance in habitats of wildlife populations from noise (impacts usually local and short-term) & to the local aquatic habitats. From the last few years, the mining rate has increased several times. It results in the loss of biodiversity of both flora and fauna and physiographic features of the concerned region.



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CHAPTER- 23

REMEDIAL MEASURES TO MITIGATE THE IMPACT OF THE MINING ON THE ENVIRONMENT

1. AIR ENVIRONMENT:

Mitigation Measures

a) For Fugitive Dust Emission:

- All trucks should be covered by tarpaulin sheet to prevent dust emission.
- Water spraying should be there in haul road, crusher and mining area.
- Dust extractor should be used to reduce dust generation
- Plantation will be carried out on approach roads.

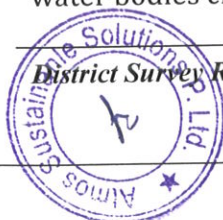
b) For Vehicular Emission

- Overloading of trucks and trolleys should be prevented.
- Vehicular emission can pose serious health hazard. During the earth mining extraction, tractor/truck should be used for transportation. Tractor/truck comprises of diesel engine produce particles are dangerously fine of PM10 & PM2.5. It is well known fact that combustion of diesel generates small particulate matter, nitrogen oxides and sulphur dioxide.
- Ultra-low sulphur diesel should be used in vehicle. CPCB prescribed emission Standards for the vehicle would be followed.
- Monitoring of dust fall at land located nearby the mining area.
- Deploying PUC certified vehicles to reduce their noise emission.

2. WATER ENVIRONMENT: -

Mitigation measures

- i. No diversion will be done. There will not be any adverse impact on flow pattern, surface hydrology and ground water regime.
- ii. Safeguards will be adopted against health risks on account of breeding of vectors in the water bodies created due to excavation.



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- iii. Laborers should not be allowed to through trashes in water bodies.
- iv. Utmost care should be taken to minimize or control oil spills or leakage from vehicles used for soil transportation.
- v. Water Quality Monitoring for the, ground water should be carried out seasonally to ensure that the water quality is not affected by the project activities.
- vi. Safety barrier zone will be left from both sides of river, which will minimize the chances of bank failure
- vii. The contractor should adhere all guidelines and rules for proper and scientific method of mining during the period of extracting of minerals that the project activities should not have any adverse effect on the physical components of the environment including recharge of ground waters or water quality.

3. LAND ENVIRONMENT:

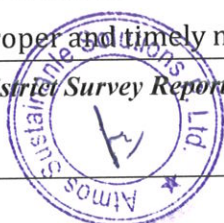
Mitigation measures

- i. Foreign materials like polythene bag, jute bag and useless articles should not be allowed to remain/spill on the land, or no pits/pockets should be allowed to be filled with such material.
- ii. Mining should not exceed beyond the agreed extraction depth.
- iii. Quantities will be strictly limited so that sand accumulation rates are sufficient to avoid extended impacts on channel morphology.
- iv. Loss of habitat is minimized because the river bed mining will be carried only in dry bed which will not disturb the riverine ecosystem

4. NOISE ENVIRONMENT:

Mitigation measures

- i. Well maintained vehicles should be used in order to reduce the noise during movement of vehicles.
- ii. Regular and proper maintenance of transportation vehicles (trucks, tractor etc.) should be ensured.
- iii. Proper and timely maintenance of machineries



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- iv. The noise levels from all these sources are periodical and restricted to particular operation.

5. FLORA AND FAUNA:

Mitigation measures

- i. Sediment and erosion control by planting native trees and shrubs to stabilize degraded farming land.
- ii. Regular monitoring of plants and animals on site.
- iii. Establishing and maintaining habitat corridors.
- iv. Stabilize all slopes, re-vegetating with native species to reduce/avoid erosion.
- v. In case of mining lease in elephant affected area, some form of physical barrier shall be installed to prevent any accident.



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CHAPTER- 24
RECLAMATION OF MINED OUR AREA

(Best practice already implemented in the district, requirements as per rules and regulation, proposed reclamation plan).

It is river bed sand the volume of sand extracted in each year will be re-deposited in subsequent years during rainy season.

This DSR are prepared of sand mining from river bed mining (RBM) the mineral will be extract from RBM. It is a drift deposit of sand every year sand replenished by flood and rainy session. This is natural phenomena reclama exhaust area.



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CHAPTER- 25

RISK ASSESSMENT AND DISASTER MANAGEMENT PLAN

Risk analysis is the systematic study of risks encountered during various stages of mining operation. Risk analysis seek to identify the risks involved in mining operations, to understand how and when they arise, and estimate the impact (financial or otherwise) of adverse outcomes. The sand mining operation in the district is mainly done manually.

IDENTIFICATION OF RISK DUE TO RIVER SAND MINING:

There is no land degradation due to mining activities as mining is done only on river bed dry surface. There will be no OB or waste generation as the sand is exposed in the river bed and is completely sealable. There will be neither any stacking of soil nor creation of OB dumps. The mining activity will be carried out up to a maximum depth of 3m below the surface level. So, there is no chance of slope failure, bench failure in the mines. However, there are some identified risk in the mining activity which are as below:

1. Accident during sand loading and transportation
2. Inundation/ Flooding
3. Quick Sand Condition

Mitigation measures

Measures to prevent accidents during loading and transportation:

- During the loading truck would be brought to a lower level so that the loading operation suits to the ergonomic condition of the workers.
- The workers will be provided with gloves and safety shoes during loading.
- Opening of the side covers of the truck should be done carefully and with warning to prevent injury to the loaders.
- Mining Operations will be takes place during daylight only.
- The truck will be covered with tarpaulin and maintained to prevent any spillage.
- To avoid danger while reversing the trackless vehicles especially at the embankment and tipping points, all areas for reversing of Lorries should be made man free as far as possible.



- All transportation within the main working will be carried out directly under the supervision and control of the management.
- Overloading should not be permitted and the maximum permissible speed limit should be ensured.
- There will be regular maintenance of the trucks and the drivers will have valid driving license.

Measures to prevent incidents during Inundation/ Flooding:

- To minimize the risk of flooding/ inundation following measures will be under taken:
- Mining will be completely closed during the monsoon months.
- Proper weather information particularly on rain should be kept during the operational period of mines so that precautionary measures will be undertaken.

Measures for mitigation to quick sand condition:

- Quick sand zone and deep-water zone will be clearly demarcated and all the mines workers will made aware of the location.
- Mining will be done strictly as per the approved mining plan.

DISASTER MANAGEMENT PLAN:

As the depth of mining will be maximum of 3m below the surface level considering local condition, the risk related to mining activity is much less. The mining operation will be carried out under the supervision experienced and qualified Mines Manager having Certificate of Competency to manage the mines granted by DGMS. All the provisions of Mines Act 1952, MMR 1961 and Mines Rules 1955 and other laws applicable to mine will strictly be complied. During heavy rainfall and during the monsoon season the mining activities will be closed. Proper coordination with Irrigation Department should be maintained so that at the time of releasing water, if any, from the dam suitable warning/information is given in advance. Special attention and requisite precautions shall be taken while working in areas of geological weakness like existence of slip, fault etc. The mining site will be supplied with first-aid facilities and the entire mines worker will have access to that.



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UTILIZATION OF SAND:

The most prolific user of sand is the construction industry where it is almost vital for almost every aspect of a building project. Sand is used in everything from cement and concrete to plastering, roofing, grouting and paint. It's even used to help defend buildings from flooding when it's in sandbags. So it's pretty safe to say that if it wasn't for sand you're house probably wouldn't be standing. From beds to flood plains to coastlines- we can find the sand at almost everywhere. The robustness of sand has played a significant role in everyday life. We use sand practically every other day.

In the real world, there are a lot of situations where we can find uses of sand. Followings are the common sand uses.

- We can use sand to filter water; it works like an abrasive.
- We can use sand to give a grip to our painting or wall art by combining 2 cups of paint with a ¾ cup of sand.
- People make sandpaper by gluing sand to a paper.
- While binging metal, we can mix sand with clay binder for frameworks used in the foundries.
- Sand can be used for cleaning up oil leak or any spill by dredging sand on that spill. The material will form clumps by soaking up, and we can quickly clean the mess.
- Sand can be used as a road base which is a protective layer underneath all roads
- Industrial sand is used to make glass, as foundry sand and as abrasive sand.
- One creative usage of sand is serving as a candle holder. We can try putting some sand before pouring tea light or any candle in a glass. It holds the candle still and refrain the candle from rolling by giving it an excellent decoration.
- Adds texture and aesthetic appeal to space.
- Sand is mostly pure to handle, promptly available and economically wise.
- We can make children's sandpit to keep the play areas safer. It is quite inexpensive as well.
- We use sand in aquariums, fabricating artificial fringing reefs, and in human-made beaches
- Sandy soils are ideal for growing crops, fruits and vegetables like watermelon,



peaches, peanuts, etc.

- Sand can light a path by filling mason jars with sand and tea light which is another inexpensive way to make a walkway glow.
- We can keep a small scuttle of sand near a charcoal grill for inundating flare-ups.
- Sand can be used for cleaning narrow neck receptacle by putting a little sand and warm soapy water in the container.
- We can keep an item steady which needs repairing by using sand. Burying the broken pieces under sand grains helps to hold the elements together while gluing.
- Sand helps to improve resistance (and thus traffic safety) in icy or snowy conditions.
- We need sand in the beaches where tides, storms or any form of preconceived changes to the shoreline crumble the first sand.
- Sand containing silica is used for making glass in the automobile and food industry- even household products for the kitchen.
- Sand is a strong strand which is used for plaster, mortar, concrete, and asphalt.
- The usual bricks formulated of clay only is way weaker and lesser in weight than blocks made of clay mixed with sand.



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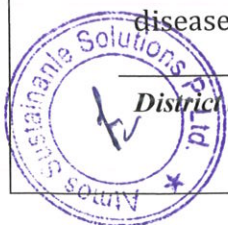


CHAPTER- 26 DETAILS OF THE OCCUPATIONAL HEALTH ISSUES IN THE DISTRICT

(Last five-years data of number of patients of silicosis & Tuberculosis is also needs to be submitted).

Occupational Health Hazard and Remedial Measures:

Occupational injuries cause major health problems that all developed, developing, and underdeveloped nations worldwide are facing. The majority of the workforce is deprived of occupational health services. The estimated economic loss due to work-related injuries and diseases is equivalent to 4% of the world's gross national product. The impact is much higher in developing countries. According to Leigh et al, 100 million occupational injuries occur throughout the world each year. Mine workers are subjected to a number of subtly harmful risks to health and safety, such as a high concentration of mechanical equipment in a confined space. As a result, mine workers are often exposed to a high risk of work-related musculoskeletal injuries, according to the US Bureau of Labor Statistics. A large number of laborers in India work in the stone crushing and mining industries. Mining is a tedious physical work, and involves exposure to colloidal silica and particulate matter. Workers are more prone to dental injuries due to a limited working area. Due to the tedious working schedule, workers develop the habit of alcohol consumption and tobacco use, which leads to deterioration of their oral health. Most of the mine workers are malnourished, have ill health, and suffer from physical impairments due to accidents at mining areas. According to the Mines and Geology Department, the Government of Rajasthan, the average life expectancy of a mine worker is 49 years. This is 10 years less than the life expectancy of workers who work outside the mines. In the workplace, workers are exposed to biological, chemical, and physical agents, which can result in adverse effects ranging from simple discomfort and irritation to debilitating occupational diseases such as lung fibrosis, neuropathy, deafness, organ damage, lung diseases (such as silicosis, tuberculosis, silicotuberculosis, and asthma), and cancers of various sites. The persons employed in the mines are exposed to a number of hazards at work which adversely affect their health. Some of the important ones are dust, noise, heat, humidity, vibration etc. In recent times, there has been increasing awareness among mining industry and the workers about occupational diseases such as Coal Worker's Pneumoconiosis, Silicosis, Manganese Poisoning,



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Hearing Impairment etc. caused by exposure to health hazards at work. Almost all occupational diseases are known to cause permanent disablement and there is no effective treatment. However, most of the occupational diseases can be District Survey Report of Saraikela-Kharsawan District for Minor Mineral (Stone) 69 prevented by adopting proper occupational health measures and engineering control on airborne dust at workplace. Following diseases have been notified as the diseases connected with mining operations for the purpose of sub-section (1) of Section 25 of the Mines Act, 1952: S.R.O. 1306 dated the 21st July, 1952 1. Silicosis 2. Pneumoconiosis S.R. O. 2521 dated the 26th June, 1986 Cancer of lung or the stomach or the pleura and peritoneum (i.e. mesothelioma) 25 S.O. 399(E) dated 21st February, 2011 1. Noise Induced Hearing Loss 2. Contact Dermatitis caused by direct contact with chemical. 3. Pathological manifestations due to radium or radioactive substances System of Detection of Occupational Diseases in Mines In order to detect occupational diseases the industry is required to conduct medical examinations and health surveillance of workers as per the provisions of Mines Act. The present efforts of mines management are concentrated on detection of silicosis, Pneumoconiosis and other notified diseases. Very little attention is paid to other occupational diseases. The essential features of health surveillance programme required to be carried out in mines are: (a) Initial Medical Examination of persons to be employed in mines. (b) Periodic Medical Examination once every five years. General physical examination, chest radiographs, lung function tests and audiometry. (c) Classification of chest radiographs of workers as per ILO Classification. (d) Medical examination within one year of superannuation. (e) Evaluation of all cases of suspected pneumoconiosis by Pneumoconiosis Medical Board. (f) Maintenance of medical records till the person is in service and 10 years thereafter. The cases of silicosis detected during health surveillance programme are referred to Pneumoconiosis Medical Board of the mining companies for evaluation and certification. If certified, the case is notified to the enforcement authority and evaluated for disability and payment of compensation. Many cases of silicosis and other pneumoconiosis go undetected and a large number of cases of silicosis are misdiagnosed due to lack of training of medical professionals.



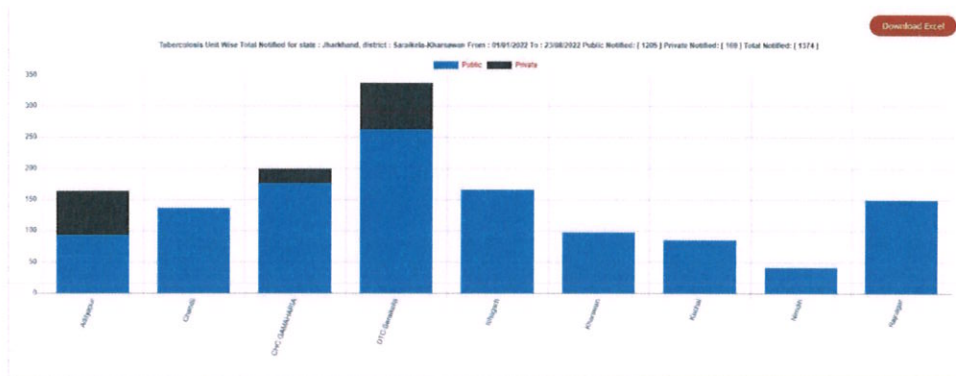
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District Survey Report of Saraikela-Kharsawan District for Minor Mineral (Stone) 70 as per data published by National Health Systems Resource Centre the known causes of deaths in Saraikela-Kharsawan.

- Data was obtained from the NIKSHAY portal of State TB Cell, Jharkhand. The secondary data of the Nikshay portal under NTEP was analysed to enumerate all the variables in the web based portal. Data from the state of Jharkhand from January 1 to December 31, 2019 was obtained.

A total of 57,504 TB patients were notified. Most of patients were in the 15-44 years age group with males being 69%, most belonged to Drug sensitive category(98%) and Pulmonary TB(86%) being most common. Among extra pulmonary the most common site was Abdominal TB (34%). Treatment success rate was 83%.



Tuberculosis Unit	Total Public Notified	Total Private Notified
Adityapur	93	71
Chandil	136	0
CHC GAMAHARIA	176	23
DTC-Saraikela	262	75
Ichagarh	166	0
Kharsawan	97	0
Kuchai	85	0
Nimdih	41	0
Rajnagar	149	0
Total	1205	169



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In Jharkhand Jharkhand's Saraikela-Kharsawan district is one of the places ravaged by silicosis. Particularly affected are Terenga, Purnapani and Kendadih villages, where 20 people have died in the past four years. The villagers blame their woes on a silica dust-producing plant, K K Minerals and K K Sale.

Source: nikshay.in



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CHAPTER- 27 PLANTATION AND GREEN BELT DEVELOPMENT IN RESPECT OF LEASES ALREADY GRANTED IN THE DISTRICT

The basic approach to green belt / plant growth in the lease area is to provide an esthetic look, reduce fugitive pollution, and monitor noise effect, etc.

Green Belt will be developed based on the following principles:

- Protect natural or semi-natural environments;
- Improve air quality within urban areas;
- Protect the unique character of rural communities that might otherwise be absorbed by expanding suburbs.
- Plants that grow fast should be preferred
- Preference for high canopy covers plants with local varieties
- Perennial and evergreen plants should be preferred
- Plants having a high Air Pollution Tolerance Index (APTI) should be preferred.

The green belt has many benefits for people:

- Walking, camping, and biking areas close to the cities and towns.
- Contiguous habitat network for wild plants, animals and wildlife.
- Cleaner air and water.
- Better land use of areas within the bordering cities.

Greenbelt Development & Plantation Programme:

Plantation should be developed at 2 M x 2 M spacing, the rate of survival should be aimed at 80% by regular watering & fencing to keep plants safe from animal grazing. Local species will be planted in consultation with local horticulturist. Diseased plants should be replaced by planting new saplings.

Recommendation for Green Belt Development

It is strongly recommended to create greenbelt around the project site or in case lease failed the authority should take proper action to stop mining operation or revoke mining permission with necessary action.



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CHAPTER- 28 CONCLUSION

1. It has been observed during the preparation of district survey report that Saraikela-Kharsawan district do not have any drift minor mineral occurrences as per the till date studies being carried out by various authorities and agencies.
2. The replenishment study has been carried out during the preparation of this DSR after analysing datasets of consecutive calendar years.
3. Both field-based survey coupled with satellite imagery study and empirical study were carried out to determine the rate of replenishment in each river of the district.
4. The determined values of various methods as adopted for replenishment study gives a comparable value and in all cases the values are found to be much more as compared to the capping limit (60%) as suggested in the Enforcement & Monitoring Guidelines for Sand Mining (EMGSM) January 2020, Issued by Ministry of Environment, Forest and Climate Change (MoEF & CC) 2020.
5. It is suggested to have a periodical review along with field data acquisition during pre and post monsoon periods to record the seasonal variance of the sedimentation rate on annual basis and update this DSR in case of any abnormal findings.
6. This is a part of Govt. of India's policy to develop maximum infrastructure facility in India. This making of road will generate direct and indirect employment to the local people.



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ANNEXURE-01

CIRCLE OFFICER



अंचल अधिकारी का कार्यालय, राजनगर।

पत्रांक,

अंचल अधिकारी,
राजनगर।

पत्रांक 183
दिनांक 21-2-23

पत्र में,

जिला खनन पदाधिकारी,
सरायकेला-खरसावाँ।

विषय :-

DSR (Sand) में चिन्हित बालू घाटों से संबंधित प्रतिवेदन मीजा-जदुडीह, थाना नं0-435, खाता संख्या-72, खेसरा नं0-501 के संदर्भ में।

संलग्न:-

उपयुक्त, सरायकेला-खरसावाँ का पत्रांक- 34/एम0 दिनांक -18.01.2023

उपरोक्त विषयक प्रासंगिक पत्र द्वारा प्राप्त आवेदन पर संबंधित राजस्व उप निरीक्षक, प्रभारी अंचल निरीक्षक एवं अंचल अमीन के द्वारा स्थानीय जांच किया। मीजा-जदुडीह, थाना नं0-435, खाता संख्या-72, खेसरा नं0-501, रकबा-44.49 एकड़ किस्म-नदी खरकई हाल सर्वे खतियान में अनावाद विहार सरकार के नाम पर दर्ज है। इस संदर्भ में प्रतिवेदन कण्डिकावार निम्न प्रकार है:-

क्रमांक	जांच का बिन्दु	प्रतिवेदन
1	क्या आवेदित भूमि की कोटी सर्वे खतियान यथा रजिस्टर-II में जंगल-झाड़ी के रूप में दर्ज है ?	नहीं है।
2	क्या 500 मीटर की दूरी के अन्दर कोई पुल/पुलिया स्थित है ?	नहीं है।
3	क्या 500 मीटर की दूरी के अन्दर कोई मानव वनछट (Heavitation) स्थित है ?	नहीं है।
4	क्या 500 मीटर की दूरी के अन्दर कोई जलीय निकाय (DAM/ RESERVOIR) स्थित है ?	नहीं है।
5	क्या 500 मीटर की दूरी के अन्दर कोई शैक्षणिक संस्थान (Educational Institute) स्थित है ?	नहीं है।
6	क्या 500 मीटर की दूरी के अन्दर कोई चिकित्सालय (Hospital) स्थित है ?	नहीं है।
7	क्या 500 मीटर की दूरी के अन्दर कोई अन्तरराज्य (Interstate) सीमा स्थित है ?	नहीं है।
8	क्या 500 मीटर की दूरी के अन्दर कोई राष्ट्रीय धरोहर/पुरातत्विक (Monuments /Archaeological) स्थित है ?	नहीं है।

अतः उपरोक्त क्रमांक 01 से 08 पर माँगी गई वांछित प्रतिवेदन अग्रेतर कार्रवाई हेतु भेजी जा रही है।



विश्वासभाजन

21/2/23

अंचल अधिकारी,
राजनगर।

जापांक 183 दिनांक 21-2-23

प्रतिलिपि :- अपर उपायुक्त, सरायकेला-खरसावाँ को सादर सूचनार्थ समर्पित।

अंचल अधिकारी,
राजनगर।

अंचल आधिकारी का कार्यालय, राजनगर।

पत्रांक 182
दिनांक 21-2-23

सेवा : अंचल आधिकारी,
राजनगर।

सेवा में : जिला राजनगर प्रशासन,
सरायकेला खरसावाँ।

विषय : DSR (Sand) में चिह्नित बालू घाटों से संबंधित प्रतिवेदन मौजा-सरजमडीह, थाना नं0-441, खाना खोला-32, आंशिक खेसरा नं0 222/P के संदर्भ में।

उपरोक्त, सरायकेला-खरसावाँ का पत्रांक- 34/एम0 दिनांक -18.01.2023

उपरोक्त विषय पर प्राप्त आवेदन पर संबंधित राजस्व उप निरीक्षक, प्रमारी अंचल प्रशासन एवं अंचल अभियंता द्वारा स्थानीय जांच किया। मौजा-सरजमडीह, थाना नं0-441, खाना खोला-32 आंशिक खेसरा नं0 222/P सजा-7.92 एकड़ किरम-नदी, हाल सर्वे खतियान में अनावाद विहार सड़क के नाम पर 08 खोला इस संदर्भ में प्रतिवेदन कण्डिकावार निम्न प्रकार है:-

क्रमांक	जांच का विन्दु	प्रतिवेदन
1	क्या आवेदन समि की कोठी रावे खतियान यथा गजमंडर-11 में सड़क के रूप में दर्ज है ?	नहीं है।
2	क्या 500 मीटर की दूरी के अन्दर कोई पुल/पुलिया स्थित है ?	नहीं है।
3	क्या 500 मीटर की दूरी के अन्दर कोई मानव बसावट (Habitation) स्थित है ?	नहीं है।
4	क्या 500 मीटर की दूरी के अन्दर कोई जलीय निचाव (DAM RESERVOIR) स्थित है ?	नहीं है।
5	क्या 500 मीटर की दूरी के अन्दर कोई शैक्षणिक संस्थान (Educational Institute) स्थित है ?	नहीं है।
6	क्या 500 मीटर की दूरी के अन्दर कोई चिकित्सालय (Hospital) स्थित है ?	नहीं है।
7	क्या 500 मीटर की दूरी के अन्दर कोई अन्तराज्य (Interstate) स्थित है ?	नहीं है।
8	क्या 500 मीटर की दूरी के अन्दर कोई राष्ट्रीय धरोहर/पुरातत्व (Monuments /Archaeological) स्थित है ?	नहीं है।

उपरोक्त क्रमांक 01 से 08 पर माँगी गई बांझित प्रतिवेदन अग्रतर कार्रवाई हेतु भेजी जा रही है।



विश्वासभाजन
21/02/23
अंचल अधिकारी,
राजनगर।

पत्रांक 182 दिनांक 21-2-23

प्रतिनिधि - अपर निरीक्षक, सरायकेला-खरसावाँ को सादर सूचनार्थ समर्पित।

21/02/23
अंचल अधिकारी,
राजनगर।

अंचल अधिकारी का कार्यालय, राजनगर।

विषय,

अंचल अधिकारी,
राजनगर।

पत्रांक 180
दिनांक 21-2-23

सेवा में,

जिला खनन पदाधिकारी,
सरायकेला-खरसावाँ।

विषय :-

DSR (Sand) में चिन्हित बालू घाटों से संबंधित प्रतिवेदन मौजा-मझगाँव, थाना नं0-447, खाता नं0-67, खेसरा नं0-7/260 के संदर्भ में।

परिणत:-

उपयुक्त, सरायकेला-खरसावाँ का पत्रांक- 34/एम0 दिनांक -18.01.2023

समाप्त

उपर्युक्त विषयक प्रासंगिक पत्र द्वारा प्राप्त आवेदन पर संबंधित राजस्व उप निरीक्षक, प्रभारी अंचल निरीक्षक एच अंचल अमीन के द्वारा स्थानीय जाँच किया। मौजा-मझगाँव, थाना नं0-447, खाता नं0-67, खेसरा नं0-7/260, रजवा-8 एम्ड किस्म-नदी ताल सर्वे खतियान में अनावार विहार सरकार के नाम पर दर्ज है। इस संदर्भ में प्रतिवेदन कठिणकार निम्न प्रकार है :-

क्रमांक	जाँच का बिन्दु	प्रतिवेदन
1	क्या आवेदित भूमि की कोटी सर्वे खतियान यथा रजिस्टर-II में जंगल-झाड़ी के रूप में दर्ज है ?	नहीं है।
2	क्या 500 मीटर की दूरी के अन्दर कोई पुल/पुलिया स्थित है ?	हाँ।
3	क्या 500 मीटर की दूरी के अन्दर कोई मानव बसावट (Heavitation) स्थित है ?	नहीं है।
4	क्या 500 मीटर की दूरी के अन्दर कोई जलीय निकाय (DAM/ RESERVOIR) स्थित है ?	नहीं है।
5	क्या 500 मीटर की दूरी के अन्दर कोई शैक्षणिक संस्थान (Educational Institute) स्थित है ?	नहीं है।
6	क्या 500 मीटर की दूरी के अन्दर कोई चिकित्सालय (Hospital) स्थित है ?	नहीं है।
7	क्या 500 मीटर की दूरी के अन्दर कोई अन्तर्राज्य (Interstate) सीमा स्थित है ?	नहीं है।
8	क्या 500 मीटर की दूरी के अन्दर कोई राष्ट्रीय धरोहर/पुरातत्विक (Monuments /Archaeological) स्थित है ?	नहीं है।

अतः उपरोक्त क्रमांक 01 से 08 पर माँगी गई वांछित प्रतिवेदन अग्रेतर कार्रवाई हेतु भेजी जा रही है।



विश्वासभाजन
अंचल अधिकारी,
राजनगर।

ज्ञापांक 180 दिनांक 21-2-23

प्रतिलिपि :- अपर उपायुक्त, सरायकेला-खरसावाँ को सादर सूचनार्थ समर्पित।

अंचल अधिकारी,
राजनगर।

अंचल अधिकारी का कार्यालय, राजनगर।

पत्रांक

181

अंचल अधिकारी,
राजनगर।

दिनांक 21-2-23

संबंधित

विद्युत संचालन परामर्शदात्री,
सरायकेला खरसावाँ।

विषय :-

DSR (Sand) में चिह्नित बालू घाटों से संबंधित प्रतिवेदन मौजा-बालीडीह, थाना नं0-448, खेसरा नं0 822/P,823 के संदर्भ में।

परिपत्र

उपयुक्त, सरायकेला-खरसावाँ का पत्रांक- 34/एम0 दिनांक -18.01.2023

उपरोक्त विषयक प्रारंभिक पत्र द्वारा प्राप्त आवेदन पर संबंधित राजस्व उप निरीक्षक, प्रभारी अंचल राजनगर एवं अंचल अमीन ने द्वारा स्थानीय जाँच किया। मौजा-बालीडीह, थाना नं0-448, खेसरा नं0 822/P,823 का जमीन विहार सरकार खाता संख्या-103, अनावाद सर्वसाधारण खाता संख्या-104 में अंचल निरीक्षक द्वारा नये खतियान में दर्ज नहीं है। उक्त खेसरा का स्थानीय जाँच का प्रतिवेदन कण्डिकावार निम्न प्रकार है:-

क्रमांक	जाँच का बिन्दु	प्रतिवेदन
1	क्या आदेशित भूमि की कोटी सर्वे खतियान यथा रजिस्टर-II में जंगल-डाई के रूप में दर्ज है ?	हाल सर्वे खतियान पर खाता अनावाद विहार सरकार तथा अनावाद सर्वसाधारण में खेसरा संख्या-822/P,823 दर्ज नहीं पाया गया।
2	क्या 500 मीटर की दूरी के अन्दर कोई पुल/पुलिया स्थित है ?	नहीं है।
3	क्या 500 मीटर की दूरी के अन्दर कोई मानव वसति (Habitation) स्थित है ?	नहीं है।
4	क्या 500 मीटर की दूरी के अन्दर कोई जलीय निक्षय (DAM/RESERVOIR) स्थित है ?	नहीं है।
5	क्या 500 मीटर की दूरी के अन्दर कोई शैक्षणिक संस्थान (Educational Institute) स्थित है ?	नहीं है।
6	क्या 500 मीटर की दूरी के अन्दर कोई चिकित्सालय (Hospital) स्थित है ?	नहीं है।
7	क्या 500 मीटर की दूरी के अन्दर कोई अन्तराज्य (Interstate) सीमा स्थित है ?	नहीं है।
8	क्या 500 मीटर की दूरी के अन्दर कोई राष्ट्रीय धरोहर/पुरातत्व्यक (Monuments /Archaeological) स्थित है ?	नहीं है।

अतः उपरोक्त क्रमांक 01 से 08 पर माँगी गई बांछित प्रतिवेदन अग्रेतर कार्रवाई हेतु भेजी जा रही है।



ज्ञापिकांक 181 दिनांक 21-2-23

प्रतिवेदन :- अपर उपयुक्त, सरायकेला-खरसावाँ को सादर सूचनार्थ समर्पित।

विश्वासभाजन
21/02/23
अंचल अधिकारी,
राजनगर।

अंचल अधिकारी,
राजनगर।

अंचल अधिकारी का कार्यालय, सरायकेला।

प्रेषक,

अंचल अधिकारी
सरायकेला।

पत्रांक.....350
दिनांक.....28.2.2023

सेवा में,

उपायुक्त,
सरायकेला-खरसावाँ।

विषय :- DSR(Sand) में चिन्हित बालू घाटों से संबंधित प्रतिवेदन भेजने के संबंध में।

प्रसंग :- जिला खनन पदाधिकारी, सरायकेला-खरसावाँ के पत्रांक-128/एम0, दिनांक-23.02.2023

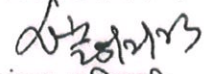
महाशय,

उपर्युक्त विषयक एवं प्रासंगिक पत्र के संबंध में कहना है कि जिला खनन पदाधिकारी, सरायकेला-खरसावाँ के पत्रांक-128/एम0, दिनांक-23.02.2023 द्वारा प्राप्त DSR(Sand) में चिन्हित बालू घाटों से संबंधित पत्र के संबंध में जाँच संबंधित राजस्व उपनिरीक्षक द्वारा अंचल अमीन के साथ संयुक्त रूप से स्थल का जाँच कर अंचल निरीक्षक के माध्यम से प्रस्तुत स्थल जाँच प्रतिवेदन के आधार पर मौजा-दिघी थाना नं0-98 खाता नं0-73 खेसरा नं0-01 रकवा क्रमशः 1.50 एकड़ बिहार सरकार के खाते की भूमि है। बिन्दुवार जाँच प्रतिवेदन निम्न प्रकार है :-

क्र0	निर्धारित बिन्दु	प्रतिवेदन
1	क्या आवेदित भूमि की कोटि सर्वे खतियान यथा रजिस्टर-II में जंगल झाड़ी के रूप में दर्ज है ?	नहीं
2	क्या 500 मी0 की दूरी के अन्दर कोई पुल/पुलिया है ?	नहीं
3	क्या 500 मी0 की दूरी के अन्दर कोई मानव बसाहट (Habitation) स्थित है ?	नहीं
4	क्या 500 मी0 की दूरी के अन्दर कोई जलीय निकाय है (Dam/Reservoir) स्थित है ?	नहीं
5	क्या 500 मी0 की दूरी के अन्दर कोई शैक्षणिक संस्थान (Educational Institute) स्थित है ?	नहीं
6	क्या 500 मी0 की दूरी के अन्दर कोई चिकित्सालय (Hospital) स्थित है ?	नहीं
7	क्या 500 कि0मी0 की परिधि में कोई अन्तर्राज्यीय (Interstate) सीमा स्थित है ?	नहीं
8	क्या 500 मी0 की दूरी के अन्दर कोई राष्ट्रीय धरोहर/पुरातत्वीय (Monuments/Archacological) महत्व के स्थल है ?	नहीं

सादर सूचनार्थ समर्पित।


विश्वासभाजन


अंचल अधिकारी
सरायकेला।

ज्ञापांक.....350 दिनांक.....28.2.2023

प्रतिलिपि :- जिला खनन पदाधिकारी सरायकेला-खरसावाँ को उनके पत्रांक-128/एम0, दिनांक-23.02.2023 के प्रसंग में सूचनार्थ समर्पित।




अंचल अधिकारी
सरायकेला।

अंचल अधिकारी का कार्यालय, राजनगर।

पत्रांक 179
दिनांक 21.2.23

अंचल अधिकारी,
राजनगर।

जिला खनन पदाधिकारी,
सरायकेला-खरसावाँ।

DSR (Sand) में चिह्नित बालू घाटों से संबंधित प्रतिवेदन मौजा-लखीपुर, थाना नं0-99, खाता नं0 93, खेसरा नं0 378/P के संदर्भ में।

उपयुक्त, सरायकेला-खरसावाँ का पत्रांक- 34/एम0 दिनांक -18.01.2023

उपरोक्त विषयक प्रारंभिक पत्र द्वारा प्राप्त आवेदन पर संबंधित राजस्व उप निरीक्षक, प्रभारी अंचल खनन एवं अंचल अमीन के द्वारा स्थानीय जाँच किया। मौजा-लखीपुर, थाना नं0-99, खाता नं0-93, खेसरा नं0 378/P पर 22.39 एकड़ किरम-नदी हाल सर्वे खतियान में अनावाद बिहार सरकार के नाम पर दर्ज है। खेसरा नं0 378/P का प्रतिवेदन कण्डिकावार निम्न प्रकार है :-

क्र.सं.	जाँच का बिन्दु	प्रतिवेदन
1	क्या अवेदित भूमि की कोटी सर्वे खतियान यथा नक्शा II में जंगल-झाड़ी के रूप में दर्ज है ?	नहीं है।
2	क्या 500 मीटर की दूरी के अन्दर कोई पुल/पुलिया स्थित है ?	नहीं है।
3	क्या 500 मीटर की दूरी के अन्दर कोई मानव वनोद (Heavitation) स्थित है ?	नहीं है।
4	क्या 500 मीटर की दूरी के अन्दर कोई जलीय निक्षेप (DAM RESERVOIR) स्थित है ?	नहीं है।
5	क्या 500 मीटर की दूरी के अन्दर कोई शैक्षणिक संस्थान (Educational Institute) स्थित है ?	नहीं है।
6	क्या 500 मीटर की दूरी के अन्दर कोई चिकित्सालय (Hospital) स्थित है ?	नहीं है।
7	क्या 500 मीटर की दूरी के अन्दर कोई अन्तराज्य (Interstate) सीमा स्थित है ?	नहीं है।
8	क्या 500 मीटर की दूरी के अन्दर कोई राष्ट्रीय धरोहर/पुरातत्विक (Monuments) (Archaeological) स्थित है ?	नहीं है।

अतः उपरोक्त क्रमांक 01 से 08 पर माँगी गई वांछित प्रतिवेदन अग्रेतर कार्रवाई हेतु भेजी जा



विश्वासभाजन

अंचल अधिकारी,
राजनगर।

अंचल अधिकारी का कार्यालय, सरायकेला।

प्रेषक,

अंचल अधिकारी
सरायकेला।

पत्रांक... 351
दिनांक... 28.2.2023

सेवा में,

उपायुक्त,
सरायकेला-खरसावाँ।

विषय :- DSR(Sand) में चिन्हित बालू घाटों से संबंधित प्रतिवेदन भेजने के संबंध में।

प्रसंग :- जिला खनन पदाधिकारी, सरायकेला-खरसावाँ के पत्रांक-128/एम0, दिनांक-23.02.2023


महाशय,

उपर्युक्त विषयक एवं प्रासंगिक पत्र के संबंध में कहना है कि जिला खनन पदाधिकारी, सरायकेला-खरसावाँ के पत्रांक-128/एम0, दिनांक-23.02.2023 द्वारा प्राप्त DSR(Sand) में चिन्हित बालू घाटों से संबंधित पत्र के संबंध में जाँच संबंधित राजस्व उपनिरीक्षक द्वारा अंचल अमीन के साथ संयुक्त रूप से स्थल का जाँच कर अंचल निरीक्षक के माध्यम से प्रस्तुत स्थल जाँच प्रतिवेदन के आधार पर मौजा-नवाडीह थाना नं0-249 खाता नं0-29 खेसरा नं0-528,529 रकवा क्रमशः 21.15 एकड़, 45.12 एकड़ किस्म-नदी बिहार सरकार के खाते की भूमि है। बिन्दुवार जाँच प्रतिवेदन निम्न प्रकार है :-

क्र0	निर्धारित बिन्दु	प्रतिवेदन
1	क्या आवेदित भूमि की कोटि सर्वे खतियान यथा रजिस्टर-II में जंगल झाड़ी के रूप में दर्ज है ?	नहीं
2	क्या 500 मी0 की दूरी के अन्दर कोई पुल/पुलिया है ?	नहीं
3	क्या 500 मी0 की दूरी के अन्दर कोई मानव बसाहट (Habitation) स्थित है ?	नहीं
4	क्या 500 मी0 की दूरी के अन्दर कोई जलीय निकाय है (Dam/Reservoir) स्थित है ?	नहीं
5	क्या 500 मी0 की दूरी के अन्दर कोई शैक्षणिक संस्थान (Educational Institute) स्थित है ?	नहीं
6	क्या 500 मी0 की दूरी के अन्दर कोई चिकित्सालय (Hospital) स्थित है ?	नहीं
7	क्या 500 कि0मी0 की परिधि में कोई अन्तर्राज्यीय (Interstate) सीमा स्थित है ?	नहीं
8	क्या 500 मी0 की दूरी के अन्दर कोई राष्ट्रीय धरोहर/पुरातत्वीय (Monuments/Archaeological) महत्व के स्थल है ?	नहीं

सादर सूचनार्थ समर्पित।

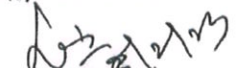
विश्वासभाजन


अंचल अधिकारी
सरायकेला।

ज्ञापांक... 351 दिनांक... 28.2.2023

प्रतिलिपि :- जिला खनन पदाधिकारी, सरायकेला-खरसावाँ को ऊपक पत्रांक-128/एम0, दिनांक-23.02.2023 के प्रसंग में सूचनार्थ समर्पित।




अंचल अधिकारी
सरायकेला।

अंचल अधिकारी का कार्यालय, सरायकेला।

सिद्ध

अंचल अधिकारी,
सरायकेला।

पत्रांक 389
दिनांक 3.3.2023

समाप्त

उपस्थित
सरायकेला-खरसानी।

विषय

DSR (Sand) में चिह्नित बालू घाटों से संबंधित स्थल जाँच प्रतिवेदन भेजने के संबंध में।

परिणाम

जिला स्तरीय पदाधिकारी, सरायकेला-खरसानी को पत्रांक-128/एम0, दिनांक-23.12.2023

महाराज

उपरोक्त विषयक एन पासगिक पत्र के संबंध में कम्पना है कि जिला स्तरीय पदाधिकारी, सरायकेला खरसानी को पत्रांक-128 एम0, दिनांक-23.12.2023 द्वारा प्राप्त पत्र के संबंध में संबंधित राजस्व उपनिरीक्षक द्वारा अमीन को साथ संयुक्त रूप से स्थल जाँच कर अंचल निरीक्षक के माध्यम से प्रस्तुत प्रतिवेदन के आधार पर मौजा जागवेड़ा खाना नं0 403, खाता नं0 42, सशोधित प्लॉट नं0 468, रकबा-2.08 एकड़, किस्म-नदी की भूमि विन्दुवार प्रतिवेदन निम्न प्रकार है :-

क्र	निर्धारित बिन्दु	प्रतिवेदन
1	क्या आवेदित भूमि की कोटी एवं स्वतिसान गणा रजिस्टर-II में जंगल झाली के रूप में दर्ज है?	नही।
2	क्या 500 मीटर की दूरी के अंदर कोई पुल/पुलिया स्थित है?	नही।
3	क्या 500 मीटर की दूरी के अंदर कोई मानव बसाहट (Habitation) स्थित है?	नही।
4	क्या 500 मीटर की दूरी के अंदर कोई जलीय निकाय (Dam Reservoir) स्थित है?	नही।
5	क्या 500 मीटर की दूरी के अंदर कोई शैक्षणिक संस्थान (Educational Institute) स्थित है?	नही।
6	क्या 500 मीटर की दूरी के अंदर कोई चिकित्सालय (Hospital) स्थित है?	नही।
7	क्या 500 मीटर की दूरी के अंदर कोई अंतराज्य (Interstate) सीमा स्थित है?	नही।
8	क्या 500 मीटर की दूरी के अंदर कोई राष्ट्रीय धरोहर/पुरातात्वीक (Monuments/Archaeological) महत्व के स्थल है?	नही।

DSR (Sand) के अनुमोदन क्रमांक के चर्णित बालू घाटों में से मौजा-जागवेड़ा, खेरारा सं0-1846 (P) आवेदन विन्या गया था, परंतु राजस्व अभिलेख मिलान से ज्ञात हुआ कि मौजा-जागवेड़ा में खेरारा सं0-1846 हाल स्वतिसान में उल्लेखित नही है। मौजा-जागवेड़ा, खाता सं0-42, खेरारा सं0-468, किस्म-नदी, रकबा-2.92 एकड़ भूमि स्वतिसान में दर्ज है। राजस्व उपनिरीक्षक द्वारा प्रतिवेदित विन्या गया है।

अतः चिह्नित बालू घाटों से संबंधित स्थल जाँच प्रतिवेदन आवश्यक कार्रवाई हेतु भेजी जा रही है।

कृपया प्राप्ति स्वीकार किया जाय।



विश्वामाजन,
(Signature)
अंचल अधिकारी
सरायकेला।
3.3.2023

दीना जी
की आज आपसे सहायता
आपकी सेवा

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विषय: DSR (Sound) की निम्नीत तालु धारों की जीप प्रतिवेदन
प्रमाण - पत्रांक 128/540 दिनांक 27.9-2023 का आदेश 316 दिनांक 24-2-2023 के.

महाराज

आपकी विषय की संदर्भ भारतीय के आयोग अनुमान आपल नतिन के रूप स्थल
जीप विषय जीप के डन DSR (Sound) की अनुमान का नि निर्णत तालु धारों के है नौजा
जामलेडा आदेश 1453 आदेश 142 संशोधित आदेश 468 रकत 2008 एक विषय नदी की
शुभ विद्युत्तर प्रतिवेदन निम्न प्रकार है।

उपरोक्त -
1. नौजा आदेशों शुभ की कोरी संशोधित आदेश 468 रकत 2008 एक विषय नदी की
निर्णत है। - नही.

(I) नौजा 500 मीटर की दुरी के अन्दर कोई कुल/कुलिया स्थित है। - नही.

(II) नौजा 500 मीटर की दुरी के अन्दर कोई नगर बसाहट स्थित है। - नही.

(III) नौजा 500 मीटर की दुरी के अन्दर कोई जलीय निवास स्थित है। - नही.

(IV) नौजा 500 मीटर की दुरी के अन्दर कोई औद्योगिक संयंत्र स्थित है। - नही.

(V) नौजा 500 मीटर की दुरी के अन्दर कोई शिक्षा स्थल स्थित है। - नही.

(VI) नौजा 500 मीटर की दुरी के अन्दर कोई आन्तःशुद्धीय खोला स्थित है। - नही.

(VII) नौजा 500 मीटर की दुरी के अन्दर कोई राष्ट्रीय धरोहर/पुरातत्विक महत्व के स्थल है
- नही.

उल्लेखनीय है कि DSR (Sound) की अनुमान का नि निर्णत तालु धारों के है नौजा
जामलेडा आदेश 1453 आदेश 142 आदेश 468 रकत 2008 एक विषय नदी की
शुभ विद्युत्तर प्रतिवेदन निम्न प्रकार है।
नौजा जामलेडा आदेश 1453 आदेश 142 संशोधित आदेश 468 रकत 2008 एक विषय नदी की
शुभ विद्युत्तर प्रतिवेदन निम्न प्रकार है।

- ① 22°46' 52" N 86° 2' 32" E
- ② 22° 46' 53" N 86° 2' 41" E
- ③ 22° 46' 44" N 86° 2' 52" E
- ④ 22° 46' 44" N 86° 2' 51" E
- ⑤ 22° 46' 46" N 86° 2' 42" E

आपकी जीप प्रतिवेदन अनुमान का रकत है, प्रेषित।

Handwritten signature
3/3/2023

(R.S.I.)
Handwritten signature





अंचल अधिकारी का कार्यालय, चाण्डिल।

पत्रांक-163

प्रेषक,

अंचल अधिकारी,
चाण्डिल।

सेवा में,

उपायुक्त,
सरायकेला-खरसावाँ।

[Handwritten Signature]

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21.02.23.

चाण्डिल, दिनांक-20.02.2023

विषय:- DSR (Sand) में चिन्हित बालू घाटों से संबंधित प्रतिवेदन के संबंध में।

प्रसंग:- भवदीय पत्रांक-33/एम0, दिनांक-18.01.2023

महाशय,

उपर्युक्त विषय के संबंध में कहना है कि DSR (Sand) में चिन्हित बालू घाटों से संबंधित जाँच राजस्व उपनिरीक्षक एवं अंचल निरीक्षक से कराया गया, प्राप्त प्रतिवेदन अनुसार विस्तृत वांछित विन्दुवार विवरण निम्न प्रकार है:-

(1) मौजा-वालीडीह, थाना नं0-203, खाता नं0-83, प्लॉट नं0-1024, 6 रकवा क्रमश-48.40 ए0 एवं 33.50 ए0 दोनो प्लॉटो का किस्म नदी खतियानी रैयत अनाबाद बिहार/झारखण्ड सरकार है।

क्र0	निर्धारित बिन्दु	प्रतिवेदन
1	क्या आवेदित भूमि की कोटी सर्वे खतियान यथा रजिस्टर II में जंगल झाड़ी के रूप में दर्ज है?	नहीं
2	क्या 500 मीटर की दूरी के अंदर कोई पुल/पुलिया स्थित है?	नहीं
3	क्या 500 मीटर की दूरी के अंदर कोई मानव बसाहट (Habitaion) स्थित है?	नहीं
4	क्या 500 मीटर की दूरी के अंदर कोई जलीय निकाय (Dam/Reservoir) स्थित है?	हाँ
5	क्या 500 मीटर की दूरी के अंदर कोई शैक्षणिक संस्थान (Educational Institute) स्थित है?	नहीं
6	क्या 500 मीटर की दूरी के अंदर कोई चिकित्सालय (Hospital) स्थित है?	नहीं
7	क्या 500 मीटर की दूरी के अंदर कोई अंतर्राज्यीय (Interstate) सीमा स्थित है?	नहीं
8	क्या 500 मीटर की दूरी के अंदर कोई राष्ट्रीय धरोहर/पुरातत्विक (Monuments/Archacological) महत्व के स्थल है ?	नहीं

[Handwritten Signature]
21/2/23

[Handwritten Signature]
21/2/23



मौजा- बामुनडीह, थाना नं०- 03, खाता नं०-65, प्लॉट नं०- 949, रकबा-39.40 एकड़
 गिरम नदी भूमि हाल सर्वे खतियान में अनावार बिहार सरकार वर्तमान झारखण्ड सरकार के
 नाम पर दर्ज है। मौजा-बामुनडीह आंशिक खूब क्षेत्र के अन्तर्गत आता है।

क्र.सं.	निर्धारित बिन्दु	प्रतिवेदन
1	क्या आवेदित भूमि की कोटी सर्वे खतियान यथा रजिस्टर-11 में जगल झाली के रूप में दर्ज है?	नहीं
2	क्या 500 मीटर की दूरी के अन्दर कोई पुल/पुलिया स्थित है?	हाँ (तिरुलडीह पुल)
3	क्या 500 मीटर की दूरी के अन्दर कोई मानव बसाहट (Habitaion) स्थित है?	नहीं
4	क्या 500 मीटर की दूरी के अन्दर कोई जलीय निकाय (Dam/Reservoir) स्थित है?	हाँ (बडा तलाब एवं सुवर्णरेखा नदी)
5	क्या 500 मीटर की दूरी के अन्दर कोई शैक्षणिक संस्थान (Educational Institute) स्थित है?	नहीं
6	क्या 500 मीटर की दूरी के अन्दर कोई चिकित्सालय (Hospital) स्थित है?	नहीं
7	क्या 500 मीटर की दूरी के अन्दर कोई अंतर्राज्यीय (Interstate) स्थित है?	नहीं
8	क्या 500 मीटर की दूरी के अन्दर कोई राष्ट्रीय धरोहर/पुरातत्वीक (Monuments/Archacological) स्थित है?	नहीं



[Handwritten Signature]

3. मौजा- गोविन्दपुर, थाना नं०- 59, खाता नं०-69, प्लॉट नं०- 631, रकबा-50.24 एकड़
 किस नदी भूमि हाल सर्वे खतियान में अनावार बिहार सरकार वर्तमान झारखण्ड सरकार के
 भाग पर दर्ज है एवं मौजा गोविन्दपुर पूर्ण खूब क्षेत्र के अन्तर्गत आता है।

क्र०	निर्धारित बिन्दु	प्रतिवेदन
1	क्या आवेदित भूमि की कोटी सर्वे खतियान यथा रजिस्टर-॥ में जंगल झाली के रूप में दर्ज है?	नहीं
2	क्या 500 मीटर की दूरी के अन्दर कोई पुल/पुलिया स्थित है?	नहीं
3	क्या 500 मीटर की दूरी के अन्दर कोई गानव बसाहट (Habitaion) स्थित है?	हाँ
4	क्या 500 मीटर की दूरी के अन्दर कोई जलीय निकाय (Dam/Reservoir) स्थित है?	हाँ (सुवर्णरेखा नदी)
5	क्या 500 मीटर की दूरी के अन्दर कोई शैक्षणिक संस्थान (Educational Institute) स्थित है?	नहीं
6	क्या 500 मीटर की दूरी के अन्दर कोई चिकित्सालय (Hospital) स्थित है?	नहीं
7	क्या 500 मीटर की दूरी के अन्दर कोई अंतर्राज्यीय (Interstate) स्थित है?	नहीं
8	क्या 500 मीटर की दूरी के अन्दर कोई राष्ट्रीय धरोहर/पुरातत्वीक (Monuments/Archacological) स्थित है?	नहीं



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E-Drive>Prem > Forwarding

अंचल अधिकारी का कार्यालय, कुकड़ू (सरायकेला-खरसावाँ)

प्रेषक,

अंचल अधिकारी
कुकड़ू।

पत्रांक.....

सेवा में,

जिला खनन पदाधिकारी,
सरायकेला-खरसावाँ।

दिनांक.....

विषय:- DSR(Sand) में चिन्हित बालू घाटों से संबंधित प्रतिवेदन का प्रेषण।

प्रसंग:- भवदीय पत्रांक:-106/एम0 दिनांक:-13.02.2023

महाशय,

उपरोक्त विषयक प्रासंगिक पत्र के संबंध में कहना है कि उल्लेखनीय है कि SEIAA, Jharkhand द्वारा DSR(Sand) के अनुमोदन के क्रम में वर्णित सपादा बालू घाट से संबंधित बिन्दु प्रतिवेदन निम्नवत् है:-

क्र0 स0	निर्धारित बिन्दु	प्रतिवेदन
1	2	3
1	क्या आवेदित भूमि की कोटी सर्वे खतियान यथा रजिस्टर-2 में जंगल झाड़ी के रूप में दर्ज है?	नही
2	क्या 500 मीटर की दूरी के अंदर कोई पुल/पुलिया स्थित है?	नही
3	क्या 500 मीटर की दूरी के अंदर कोई मानव बसाइट (Habitaion) स्थित है?	हाँ (सपादा गाँव)
4	क्या 500 मीटर की दूरी के अंदर कोई जलीय निकाय(Dam/Reservoir) स्थित है?	नही
5	क्या 500 मीटर की दूरी के अंदर कोई शैक्षणिक संस्थान(Educational Institute) स्थित है?	नही
6	क्या 500 मीटर की दूरी के अंदर कोई चिकित्सालय(Hospital) स्थित है?	नही
7	क्या 500 मीटर की दूरी के अंदर कोई अंतर्राज्यीय (Interstate) सीमा स्थित है?	नही
8	क्या 500 मीटर की दूरी के अंदर कोई राष्ट्रीय धरोहर/पुरातत्विक (Monuments/Archacological) सीमा स्थित है?	नही

अनुलग्नक:-यथोक्त।

ज्ञापांक...167.... दिनांक...21/02/2023
प्रतिलिपि:-उपायुक्त, सरायकेला-खरसावाँ को सादर सूचनार्थ समर्पित।



विश्वासभाजन

(Signature)

अंचल अधिकारी

कुकड़ू।

(Signature)

अंचल अधिकारी

कुकड़ू।

(Signature)
21/02/2023

अचल अधिकारी का कार्यालय, कुकड़ू (सरायकेला-खरसावाँ)

प्रेषक,

अचल अधिकारी
कुकड़ू।

पत्रांक.....

गया में,

जिला सनन पदाधिकारी,
सरायकेला-खरसावाँ।

दिनांक.....

विषय:- DSR(Sand) में चिन्तित बालू घाटों से संबंधित प्रतियेदन का प्रेषण।

प्रसंग:- मकसीय पत्रांक:-106/एम0 दिनांक:-13.02.2023

माननीय,

उपरोक्त विषयक प्रारंभिक पत्र के संदर्भ में यहना है कि उल्लेखनीय है कि SEIAA, Jharkhand द्वारा DSR(Sand) के अनुमोदन के क्रम में यर्गित सापाखम बालू घाट से संबंधित विन्दु प्रतियेदन निम्नवत् है:-

क्र0 स0	निर्धारित विन्दु	प्रतियेदन
1	2	3
1	यया आवेदित भूमि की कोटी सर्वे खतिगान यथा रजिस्टर-2 में जंगल झाड़ी के रूप में दर्ज है?	नहीं
2	यया 500 मीटर की दूरी के अंदर कोई पुल/पुलिया स्थित है?	नहीं
3	यया 500 मीटर की दूरी के अंदर कोई मानव बसाइंट (Habitation) स्थित है?	हाँ (सापाखम गाँव)
4	यया 500 मीटर की दूरी के अंदर कोई जलीय निष्काय(Dam/Reservoir) स्थित है?	नहीं
5	यया 500 मीटर की दूरी के अंदर कोई शैक्षणिक संस्थान(Educational Institute) स्थित है?	नहीं
6	यया 500 मीटर की दूरी के अंदर कोई चिकित्सालय(Hospital) स्थित है?	नहीं
7	यया 500 मीटर की दूरी के अंदर कोई अंतरराज्यीय (Interstate) सीमा स्थित है?	नहीं
8	यया 500 मीटर की दूरी के अंदर कोई राष्ट्रीय धरोहर/पुरातत्वीक (Monuments/Archacological) सीमा स्थित है?	नहीं

अनुलग्नक:-यथोपता।

घापांक...16.8... दिनांक...21/02/2023
प्रतिलिपि:-उपायुयता, सरायकेला-खरसावाँ को सादर सूचनार्थ समर्पित।



विश्वासभाजन

अचल अधिकारी

कुकड़ू।

अचल अधिकारी

कुकड़ू।

21/02/2023

पौजा- सोडो, थाना नं०- 03 खाता नं०-700, प्लॉट नं०- 2106, रकवा-62.00 एकड़
परम सुवर्णरेखा नदी भूमि हाल सर्वे खतियान में अनावान बिहार सरकार वर्तमान झारखण्ड
सरकार के नाम पर दर्ज है।

क्र०	निर्धारित बिन्दु	प्रतिवेदन
1	क्या आवेदित भूमि की कोटी सर्वे खतियान यथा रजिस्टर-11 में जंगल झाड़ी के रूप में दर्ज है?	नहीं
2	क्या 500 मीटर की दूरी के अन्दर कोई पुल/पुलिया स्थित है?	नहीं
3	क्या 500 मीटर की दूरी के अन्दर कोई मानव बसाहट (Habitation) स्थित है?	नहीं
4	क्या 500 मीटर की दूरी के अन्दर कोई जलीय निकाय (Dam/Reservoir) स्थित है?	हाँ (सुवर्णरेखा नदी)
5	क्या 500 मीटर की दूरी के अन्दर कोई शैक्षणिक संस्थान (Educational Institute) स्थित है?	हाँ (इंटर कॉलेज तिरुलडीह)
6	क्या 500 मीटर की दूरी के अन्दर कोई चिकित्सालय (Hospital) स्थित है?	नहीं
7	क्या 500 मीटर की दूरी के अन्दर कोई अंतर्राज्यीय (Interstate) स्थित है?	नहीं
8	क्या 500 मीटर की दूरी के अन्दर कोई राष्ट्रीय धरोहर/पुरातत्वीक (Monuments/Archaeological) स्थित है?	नहीं

भवदीय को जाँच प्रतिवेदन सादर सूचनार्थ समर्पित।

अनुलग्नक :- यथोपरि।

विश्वासभाजन

20/02/2023
अंचल अधिकारी
ईचागढ़



प्लॉट नं- 1669, रकबा-63.75 एकड़
केरम नदी भूमि हाल सर्वे खतियान में अनावाम बिहार सरकार वर्तमान झारखण्ड सरकार के नाम पर दर्ज है।

क्र.सं.	निर्धारित बिन्दु	प्रतिवेदन
1	क्या आगेदित भूमि की कोटी सर्वे खतियान यथा रजिस्टर-॥ में जंगल झाडी के रूप में दर्ज है?	नहीं
2	क्या 500 मीटर की दूरी के अन्दर कोई पुल/पुलिया स्थित है?	नहीं
3	क्या 500 मीटर की दूरी के अन्दर कोई मानव बसाहट (Habitaion) स्थित है?	नहीं
4	क्या 500 मीटर की दूरी के अन्दर कोई जलीय निकाय (Dam/Reservoir) स्थित है?	हाँ (सुवणरिखा नदी)
5	क्या 500 मीटर की दूरी के अन्दर कोई शैक्षणिक संस्थान (Educational Institute) स्थित है?	नहीं
6	क्या 500 मीटर की दूरी के अन्दर कोई चिकित्सालय (Hospital) स्थित है?	नहीं
7	क्या 500 मीटर की दूरी के अन्दर कोई अंतर्राज्यीय (Interstate) स्थित है?	नहीं
8	क्या 500 मीटर की दूरी के अन्दर कोई राष्ट्रीय धरोहर/पुरातत्वीक (Monuments/Archacological) स्थित है?	नहीं



[Handwritten Signature]

E-Drive>Prem > Forwarding

अंचल अधिकारी का कार्यालय, ईचागढ़।

अंचल अधिकारी
ईचागढ़।

Handwritten signature and date
2.2.23.

पत्रांक :- 143

दिनांक:- 20/02/2023

उपायुक्त,
सारायकेला-खरसावाँ।

DSR (Send) में चिन्हित बालू घाटों से संबंधित प्रतिवेदन के संबंध में।

भतदीय पत्रांक 31/एम0 दिनांक 18.01.2023

प्रतिवेदन

उपर्युक्त विषयक एवं प्रसंगिक पत्र के संबंध में राजस्व उप निरीक्षक, अंचल अंचल अंचल एवं अंचल अंचल से ईचागढ़ अंचल अन्तर्गत DSR (Send) में चिन्हित बालू घाटों का प्रतिवेदन प्राप्त किया गया है प्रतिवेदनानुसार वर्णित बालू घाटों से संबंधित प्रतिवेदन निम्नवत् है :-

प्लॉट नं- बीरडीह, थाना नं- 05, खाता नं-131, प्लॉट नं-741, रकवा-56.40 एकड़
सुबरनरेखा भूमि हाल सर्वे खतियान में अनावार बिहार सरकार वर्तमान झारखण्ड सरकार के नाम पर दर्ज है।

निर्धारित बिन्दु	प्रतिवेदन
क्या आवेदित भूमि की कोटी सर्वे खतियान यथा रजिस्टर-11 में जंगल झाड़ी के रूप में दर्ज है?	नहीं
क्या 500 मीटर की दूरी के अन्दर कोई पुल/पुलिया स्थित है?	नहीं
क्या 500 मीटर की दूरी के अन्दर कोई मानव बसाहट (Habitaion) स्थित है?	नहीं
क्या 500 मीटर की दूरी के अन्दर कोई जलीय निकाय (Dam/Reservoir) स्थित है?	हाँ (सुवर्णरेखा नदी)
क्या 500 मीटर की दूरी के अन्दर कोई शैक्षणिक संस्थान (Educational Institute) स्थित है?	नहीं
क्या 500 मीटर की दूरी के अन्दर कोई चिकित्सालय (Hospital) स्थित है?	नहीं
क्या 500 मीटर की दूरी के अन्दर कोई अंतर्राज्यीय (Interstate) स्थित है?	हाँ (पं० बंगाल सीमा)
क्या 500 मीटर की दूरी के अन्दर कोई राष्ट्रीय धरोहर/पुरातत्विक (Monuments/Archacological) स्थित है?	नहीं

Handwritten notes and signature
21/2/23
Ayo
gmeit
21/2/23

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ANNEXURE-02

COPY OF DFO LETTER





कार्यालय :- वन प्रमण्डल पदाधिकारी, चाईबासा वन प्रमण्डल, चाईबासा।

E-mail:- cbsadiv648@gmail.com, dfo-chaibasa@gov.in



पत्रांक : 330

दिनांक : 24/02/2023

सेवा में,

जिला खनन पदाधिकारी,
सरायकेला-खरसावाँ।

E-MAIL

विषय:- DSR (Sand) में चिन्हित बालू घाटों से संबंधित प्रतिवेदन के संबंध में।

प्रसंग:- आपके कार्यालय के पत्रांक 129 दिनांक 24.02.2023

महाशय,

उपर्युक्त विषयक प्रासंगिक पत्र के संबंध में सूचित करना है कि DSR (Sand) में चिन्हित क्रमांक संख्या 1, 2 एवं 3 पर वर्णित बालू घाटों का वन क्षेत्र पदाधिकारी, चाईबासा प्रक्षेत्र द्वारा स्थलीय जांच कर जांच प्रतिवेदन अधोहस्ताक्षरी के कार्यालय में समर्पित किया गया है। स्थलीय जांच प्रतिवेदन इस पत्र के साथ संलग्न कर भेजी जा रही है।

अनु०यथोक्त।

आपका विश्वासी

वन प्रमण्डल पदाधिकारी
चाईबासा वन प्रमण्डल, चाईबासा।



DSR (Sand) में चिन्हित बालू घाटों से संबंधित जांच प्रतिवेदन:-

क्रमांक	UIN	नदी की विवरणी	लोज विवरणी	रकबा (हे०)	परियोजना स्थल से आरक्षित / सुरक्षित वनभूमि की दूरी (मी०)	क्या परियोजना स्थल No Mining Zone/Eco-Sensitive Zone के अंतर्गत प्रतिबंधित श्रेणी में आता है?	क्या परियोजना स्थल से 10 कि०मी० की दूरी के अंदर कोई National Park/ अम्यारण एवं जैव विविधता क्षेत्र/ Eco-Sensitive Zone है?	अभ्युक्ति
1	KR1	Kharkai River Category-II	MOUZA-JADUDIH Thana-Seraikela, Thana no. 435 Dist. Seraikela-Kharsawan Plot No. 501(P) MOUZA-KUMBRAM Thana-Seraikela, Thana no. 151 Dist. Seraikela-Kharsawan Plot No. 112(P)	18.6	1048 M	प्रस्तावित स्थल सरायकेला वन प्रमण्डल के अंतर्गत आता है। अतः संबंधित अमिलेख इस प्रमण्डल में उपलब्ध नहीं है।	NO	चाईबासा वन प्रमण्डल के निकटतम वनभूमि से परियोजना स्थल की दूरी लगभग 1048 मी० है।
2	KR2	Kharkai River Category-II	MOUZA-SARJAMDIH Thana-Seraikela, Thana no. 441 Dist. Seraikela-Kharsawan Plot No. 222(P), 834	3.68	1954 M		NO	चाईबासा वन प्रमण्डल के निकटतम वनभूमि से परियोजना स्थल की दूरी लगभग 1954 मी० है।
3	KR3	Kharkai River Category-II	MOUZA-MAJHIGAN Thana-Seraikela, Thana no. 447 Dist. Seraikela-Kharsawan Plot No. 260 MOUZA-BALIDIH Thana-Seraikela, Thana no. 151 Dist. Seraikela-Kharsawan Plot No. 822(P), 823	10.00	4893 M		NO	चाईबासा वन प्रमण्डल के निकटतम वनभूमि से परियोजना स्थल की दूरी लगभग 4893 मी० है।

पत्रांक:- 90 दिनांक:- 24.02.23

प्रतिलिपि:- वन प्रमण्डल पदाधिकारी, चाईबासा वन प्रमण्डल, चाईबासा को सादर सूचनायें समर्पित।



वन क्षेत्र पदाधिकारी
चाईबासा वन प्रमण्डल।



कार्यालय : वन प्रमंडल पदाधिकारी, सरायकेला वन प्रमंडल, सरायकेला।
जिला-सरायकेला-खरसावाँ।



e-mail- dfo-saraikela@gov.in Telefax No.06597-234891(O)



पत्रांक : 362 / सरायकेला

दिनांक : 22-02-2023

सेवा में,

जिला खनन पदाधिकारी
सरायकेला-खरसावाँ।

विषय : DSR (Sand) में चिन्हित बालू घाटों से संबंधित प्रतिवेदन के संबंध में।

प्रसंग : आपका पत्रांक 104 दिनांक 13.02.2023

महाशय,

उपर्युक्त विषयक प्रासंगिक पत्र के संदर्भ में सूचित करना है कि DSR (Sand) में चिन्हित बालू घाटों का वन क्षेत्र पदाधिकारी, सरायकेला एवं चाण्डिल प्रादेशिक प्रक्षेत्र के स्थलीय जाँच प्रतिवेदन के आधार पर वांछित प्रतिवेदन तैयार कर इस पत्र के साथ संलग्न कर अग्रेतर कार्यवाही हेतु भेजी जा रही है।

अतः सूचनार्थ समर्पित।

अनु० : यथोक्त।

विश्वासभाजन,

Aditya Nayak
वन प्रमंडल पदाधिकारी,
सरायकेला वन प्रमंडल।
22-02-23
22/02/23



DSR (Sand) में चिन्हित बालू घाटों से संबंधित जांच प्रतिवेदन :-

क्रमांक	UIN	नदी की विवरणी	जीज विवरणी	रकबा (हे०)	परियोजना स्थल से आरक्षित / सुरक्षित वनभूमि की दूरी (मी०)	क्या परियोजना स्थल No Mining Zone/Eco-Sensitive Zone के अन्तर्गत प्रतिबंधित श्रेणी में आता है ?	क्या परियोजना स्थल से 10 कि०मी० की दूरी के अन्दर कोई National Park / अभ्यारण एवं जैव विविधता क्षेत्र / Eco Sensitive Zone है ?	अभियुक्ति
1	KR1	Kharkai River Category-II	MOUZA-JADUDIH Thana-Seraikela, Thana No. 435 Dist. Seraikela -Kharaswan Plot No. 501(P) MOUZA-KUMBRAM Thana-Seraikela, Thana No. 151 Dist. Seraikela -Kharaswan Plot No. 112(P)	18.60	5600 M	No	No	सरायकेला वन प्रमंडल के निकटतम वनभूमि से परियोजना स्थल की दूरी 5600 मी० है। चूंकि परियोजना स्थल सरायकेला एवं चार्डवासा वन प्रमंडल की सीमा पर स्थित है इसलिए परियोजना स्थल का चार्डवासा वन प्रमंडल के वनभूमि से दूरी के संबंध में जांच किया जाना श्रेयकर होगा।
2	KR2	Kharkai River Category-II	MOUZA-SARAMDIH Thana-Seraikela, Thana No. 441 Dist. Seraikela -Kharaswan Plot No. 222 (P), 834	3.68	5000 M	No	No	सरायकेला वन प्रमंडल के निकटतम वनभूमि से परियोजना स्थल की दूरी 5000 मी० है। चूंकि परियोजना स्थल सरायकेला एवं चार्डवासा वन प्रमंडल की सीमा पर स्थित है इसलिए परियोजना स्थल का चार्डवासा वन प्रमंडल के वनभूमि से दूरी के संबंध में जांच किया जाना श्रेयकर होगा।
3	KR3	Kharkai River Category-II	MOUZA-MAHIGAN Thana-Seraikela, Thana No. 447 Dist. Seraikela -Kharaswan Plot No. 260 MOUZA-BALDIH Thana-Seraikela, Thana No. 448 Dist. Seraikela -Kharaswan Plot No. 822 (P), 823	10.00	2000 M	No	No	सरायकेला वन प्रमंडल के निकटतम वनभूमि से परियोजना स्थल की दूरी 2000 मी० है। चूंकि परियोजना स्थल सरायकेला एवं चार्डवासा वन प्रमंडल की सीमा पर स्थित है इसलिए परियोजना स्थल का चार्डवासा वन प्रमंडल के वनभूमि से दूरी के संबंध में जांच किया जाना श्रेयकर होगा।
4	KR4	Kharkai River Category-II	MOUZA-DIGHI Thana-Govindpur, Thana No.98 Dist. Seraikela -Kharaswan Plot No. 1(P) MOUZA-LAKSHMIPUR Thana-Govindpur, Thana No. 99 Dist. Seraikela -Kharaswan Plot No. 378 (P)	8.10	140 M	No	No	



क्रमांक	UIN	नदी की विवरणी	जीज विवरणी	रकबा (हे०)	परियोजना स्थल से आरक्षित / सुरक्षित वनभूमि की दूरी (मी०)	क्या परियोजना स्थल No Mining Zone/Eco-Sensitive Zone के अन्तर्गत प्रतिबंधित क्षेत्रों में आता है ?	क्या परियोजना स्थल से 10 कि०मी० की दूरी के अन्दर कोई National Park / अभयारण्य एवं जैव विविधता क्षेत्र / Eco Sensitive Zone है ?	अभियुक्ति
5	KR5	Kharkai River Category-II	MOUZA-NUADIH Thana-Seraikela, Thana No.249 Dist. Seraikela -Kharasawan Plot No. 528(P), 529 (P)	5.70	2600 M	No	No	
6	KR6	Kharkai River Category-II	MOUZA-JAMBERA Thana-Seraikela, Thana No.453 Dist. Seraikela -Kharasawan Plot No. 1846(P)	2.08	2000 M	No	No	परियोजना स्थल के KML File अनुसार वनभूमि से दूरी 2000 मी० है। परन्तु आवेदित योजना जामबेडा का आवेदित प्लॉट संख्या-1846 (मी०) वर्ष 1958-59 के प्रकाशित नक्शा में अंकित नहीं है।
7	SR1	Subarnarekha River, Category-II	MOUZA-BALDIH Thana-Chandil, Thana No.203 Dist. Seraikela -Kharasawan Plot No. 1024 (P), 2435 (P)	12.91	231 M	No	Yes	
8	SR2	Subarnarekha River, Category-II	MOUZA-BAMUNDIH Thana-Chandil, Thana No. 12 Dist. Seraikela -Kharasawan Plot No. 949 (P) MOUZA-GOVINDPUR Thana-Chandil, Thana No. 59 Dist. Seraikela -Kharasawan Plot No. 631 (P) MOUZA-SAPADA Thana-Chandil, Thana No.60 Dist. Seraikela -Kharasawan Plot No. 1107 (P), 2122 (P), 1(P)	48.90	790 M	No	No	



क्रमांक	UIN	नदी की विवरणी	लीज विवरणी	रकबा (हे०)	परियोजना स्थल से आरक्षित / सुरक्षित वनभूमि की दूरी (मी०)	क्या परियोजना स्थल No Mining Zone/Eco-Sensitive Zone के अन्तर्गत प्रतिबंधित क्षेत्रों में आता है ?	क्या परियोजना स्थल से 10 कि०मी० की दूरी के अन्दर कोई National Park /अभ्यारण एवं जैव विविधता क्षेत्र /Eco Sensitive Zone है ?	अभियुक्ति
9	SR3	Subarnarekha River, Category-II	MOUZA-SAPARAM Thana-Chandil , Thana No.6 Dist. Seraikela -Kharasawan Plot No. 752 (P), 855 (P), 429 (P), 1 (P) MOUZA-SORO Thana-Chandil, Thana No. 3 Dist. Seraikela -Kharasawan Plot No. 2106 (P), 1669 (P) MOUZA-BIRDIH Thana-Chandil, Thana No.5 Dist. Seraikela -Kharasawan	95.20	20 M	No	No	

नोट :- सभी परियोजना स्थलों (KR4, SR1, SR2 एवं SR3 को छोड़कर) का निकटतम वनभूमि से दूरी, उपलब्ध कराये गये संबंधित स्थलों के KML File के आधार पर आकलन किया गया है। इन परियोजना स्थलों के संबंधित मौजों का नक्शा प्रमंडलीय कार्यालय में उपलब्ध नहीं है इसलिए प्रतिबंधित दूरीयों का पूर्ण रूप से सत्यापन नहीं किया जा सका है।

Aditya Kumar Singh
वन प्रमंडलीय प्रदायिका
सरायकेला वन प्रमंडल।
22/1/23



ANNEXURE-03

COPY OF WILD LIFE DFO

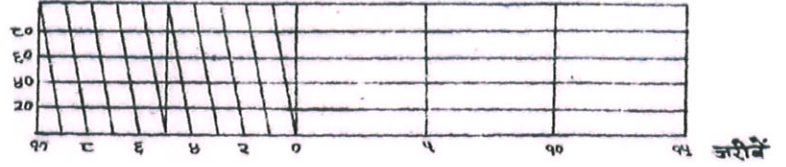


ANNEXURE-04

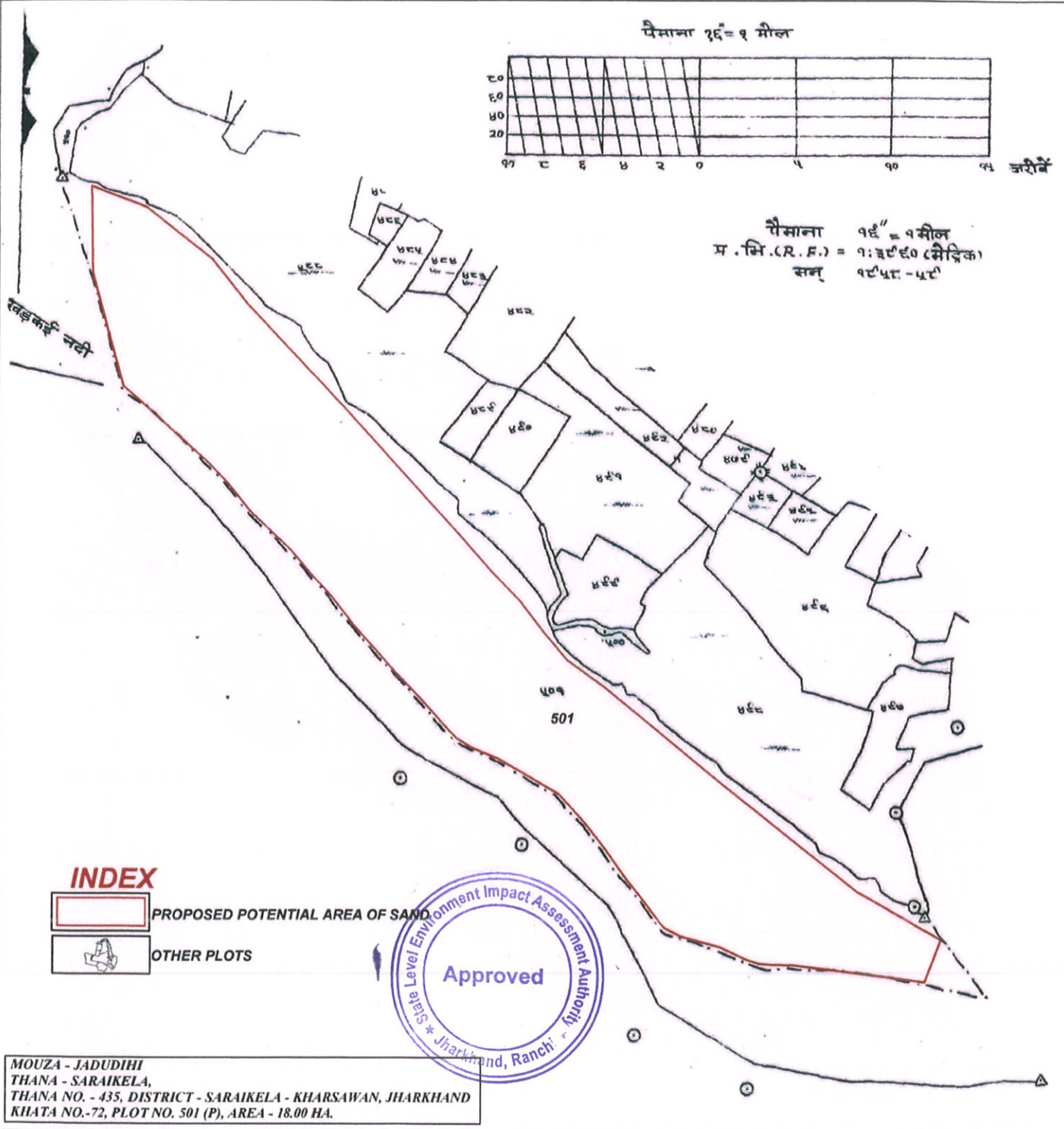
CADASTRAL MAP OF **POTENTIAL AREA OF SAND**



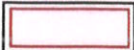

पैमाना १इं = १ मील



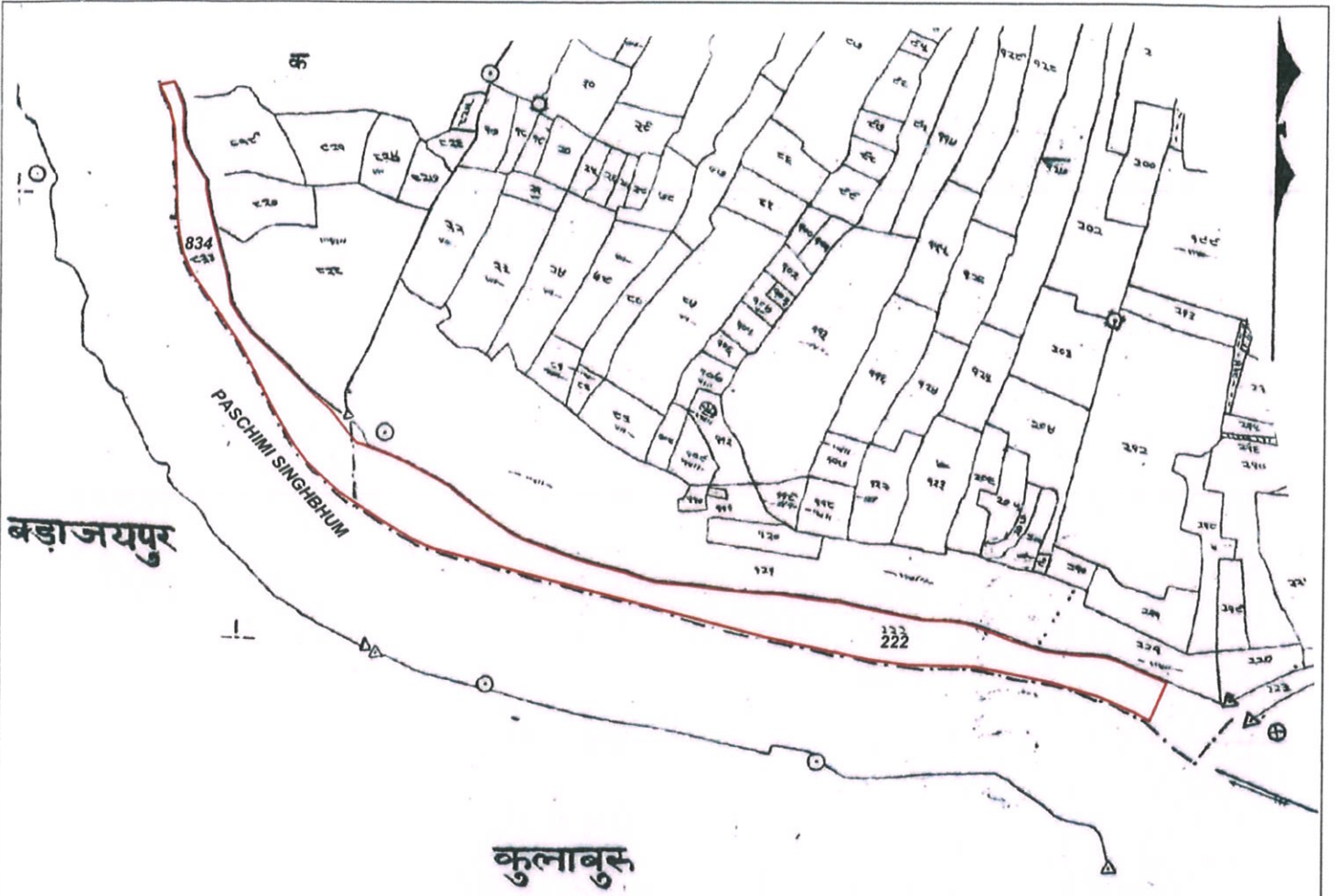
पैमाना १इं = १ मील
म. भि. (R.F.) = १:३६६० (मैट्रिक)
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-  OTHER PLOTS

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THANA NO. - 435, DISTRICT - SARAIKELA - KHARSAWAN, JHARKHAND
KHATA NO.-72, PLOT NO. 501 (P), AREA - 18.00 HA.



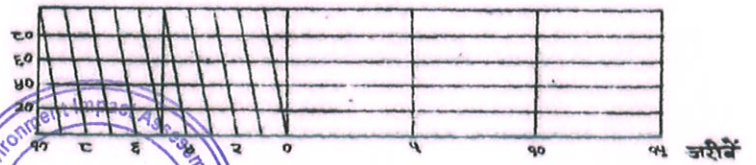
Sarjandihi. No 441

नाममौजा सारजमडीह

थाना सरायकेला

थाना नंबर ४४१

पैमाना १इं = १ मील

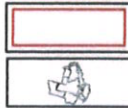


पैमानाब हिसाब फी मील १इं

प्र. मि. (R.F.) १: ३६६० (मेट्रिक)

सन १९७८-७९

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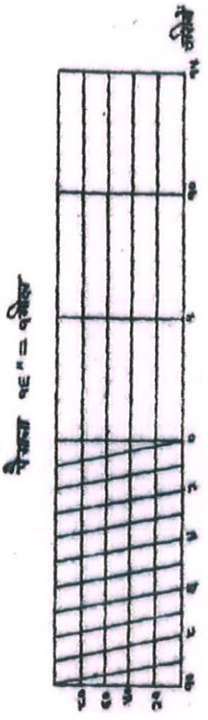
OTHER PLOTS

MOUZA - SARJAMDIHI
 THANA - SARAİKELA,
 THANA NO. - 441, DISTRICT - SARAİKELA - KHARSAWAN, JHARKHAND
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Majhigan. No. 447
 नाम मौजा मंजगांव
 थाना सरायकेला
 थाना नम्बर ४४७

प्र.मि.(अ.न.) १-३६६०(मेट्रिक)
 सन् १९५८-५९

BARA-MOUDI



BARAMAUDI

PASHCHIMI SINGHBHUM

823

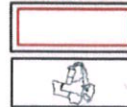
260



Balidihi. No 448

नाम ग्राम बाली डीह
 थाना सरायकेला
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 THANA NO. - 448, DISTRICT - SARAİKELA - KHARSAWAN, JHARKHAND
 PLOT NO. 822(P) & 823,
 AREA - 10.00 HA.

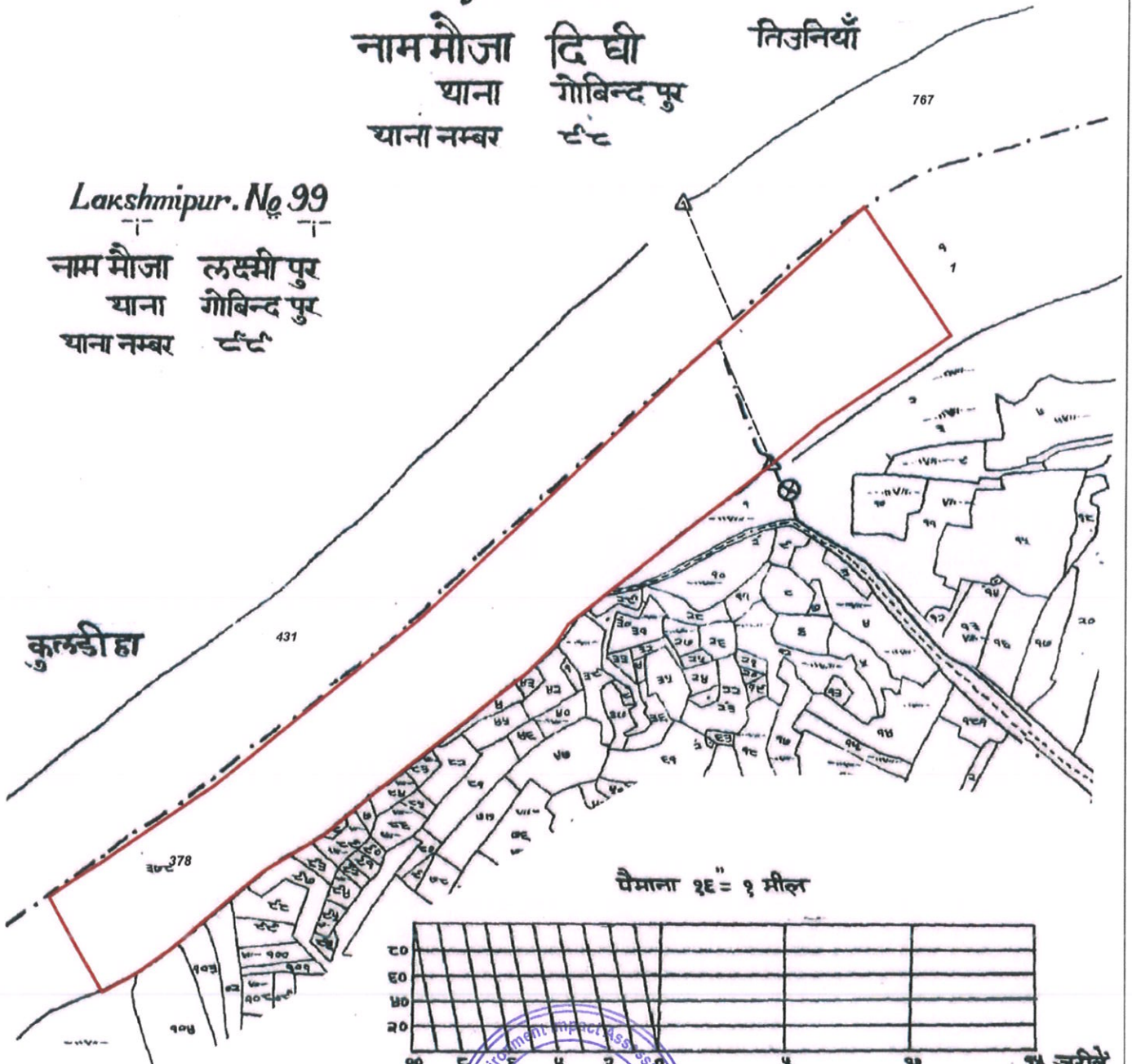
KHARKAI RIVER

Dighi. No:- 98

नाममौजा दिघी तिउनियाँ
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थाना नम्बर ८८

Lakshmipur. No 99

नाममौजा लक्ष्मीपुर
थाना गोबिन्दपुर
थाना नम्बर ८८



कुम्डीहा

767

431

378

चैमाना १इ = १ मील

जरीबे

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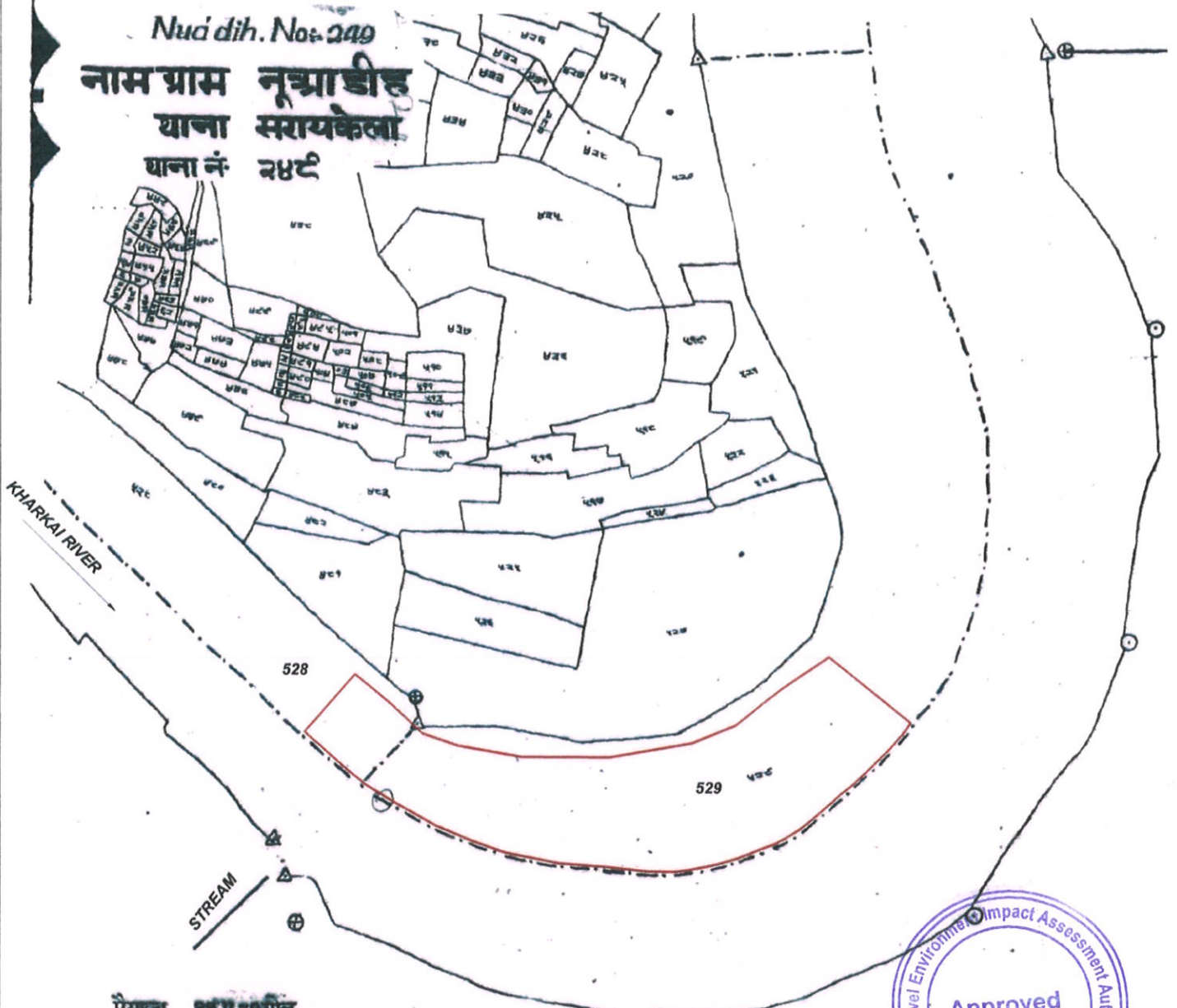
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 THANA NO. - 99, DISTRICT - SARAIKELA - KHARSAWAN, JHARKHAND
 PLOT NO. 378(P),
 AREA - 8.10 HA.

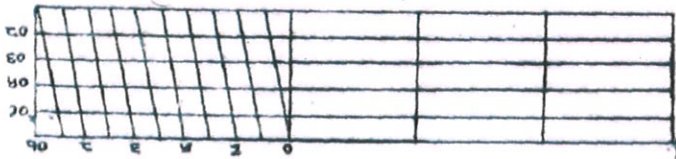
Nua dih. No- 249

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पैमाना १ इंच = १ किलोमीटर
 प्र.मि. (R.S.) = १:५००० (मैट्रिक)
 सन् १९५८-५९

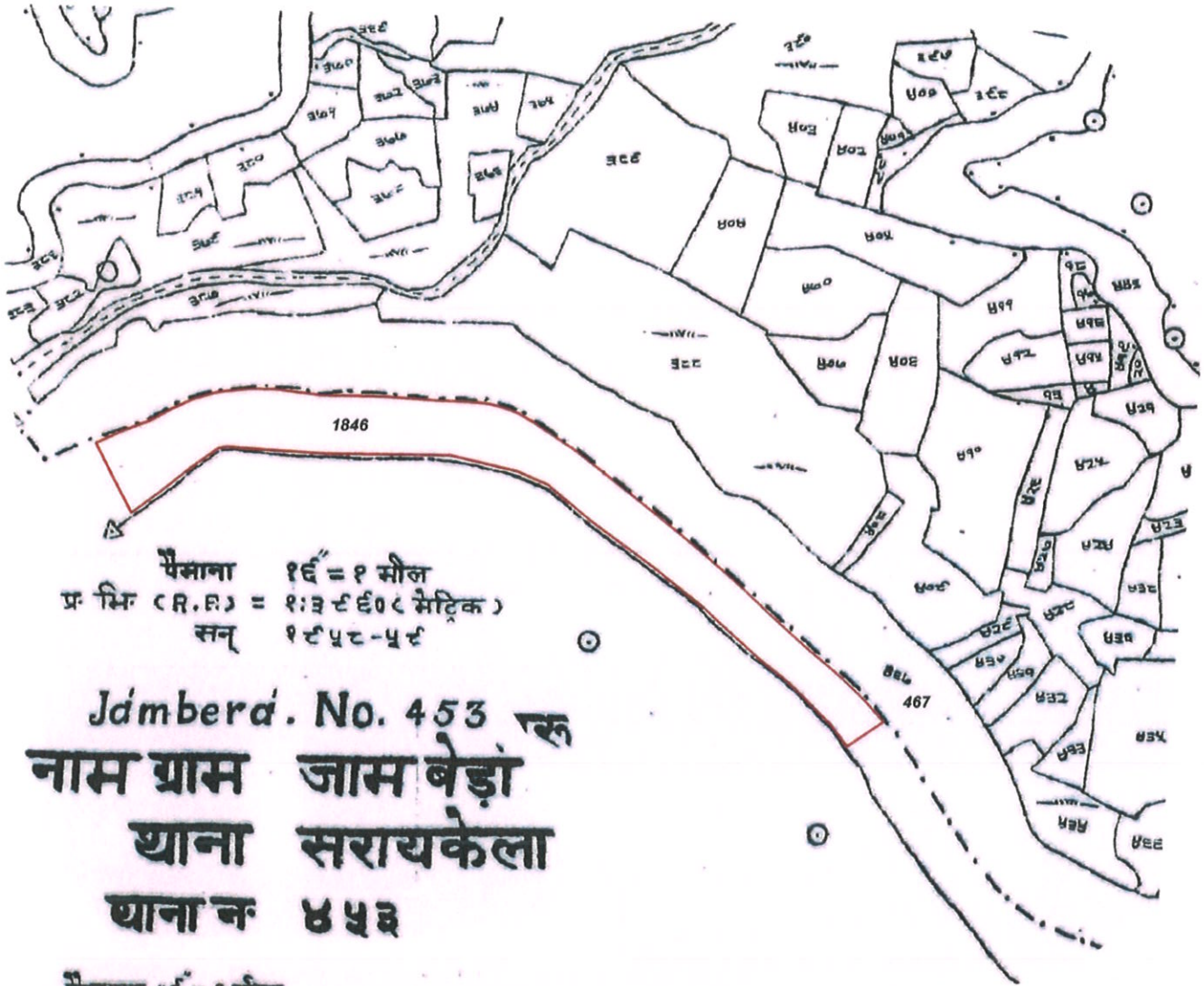
पैमाना १ इंच = १ मील



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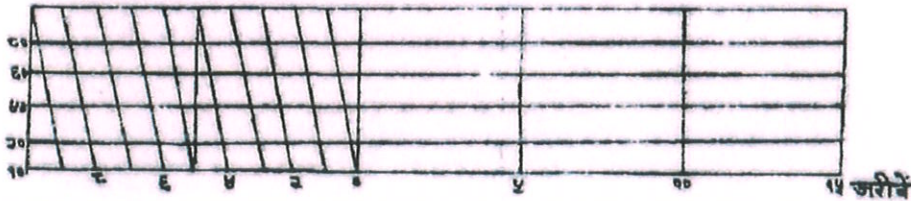
MOUZA - NUA DIH
 THANA - SARAIKELA,
 THANA NO. - 249, DISTRICT - SARAIKELA - KHARSAWAN, JHARKHAND
 PLOT NO. 528(P) & 529(P) AREA - 5.70 HA.



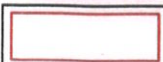

पैमाना १ ई = १ मील
 प्र. भि. (R.R.) = १:३८६० (मेट्रिक)
 सन् १९५८-५९

Jambera. No. 453
नाम ग्राम जाम बेड़ा
थाना सरायकेला
थाना न ४५३

पैमाना १ ई = १ मील



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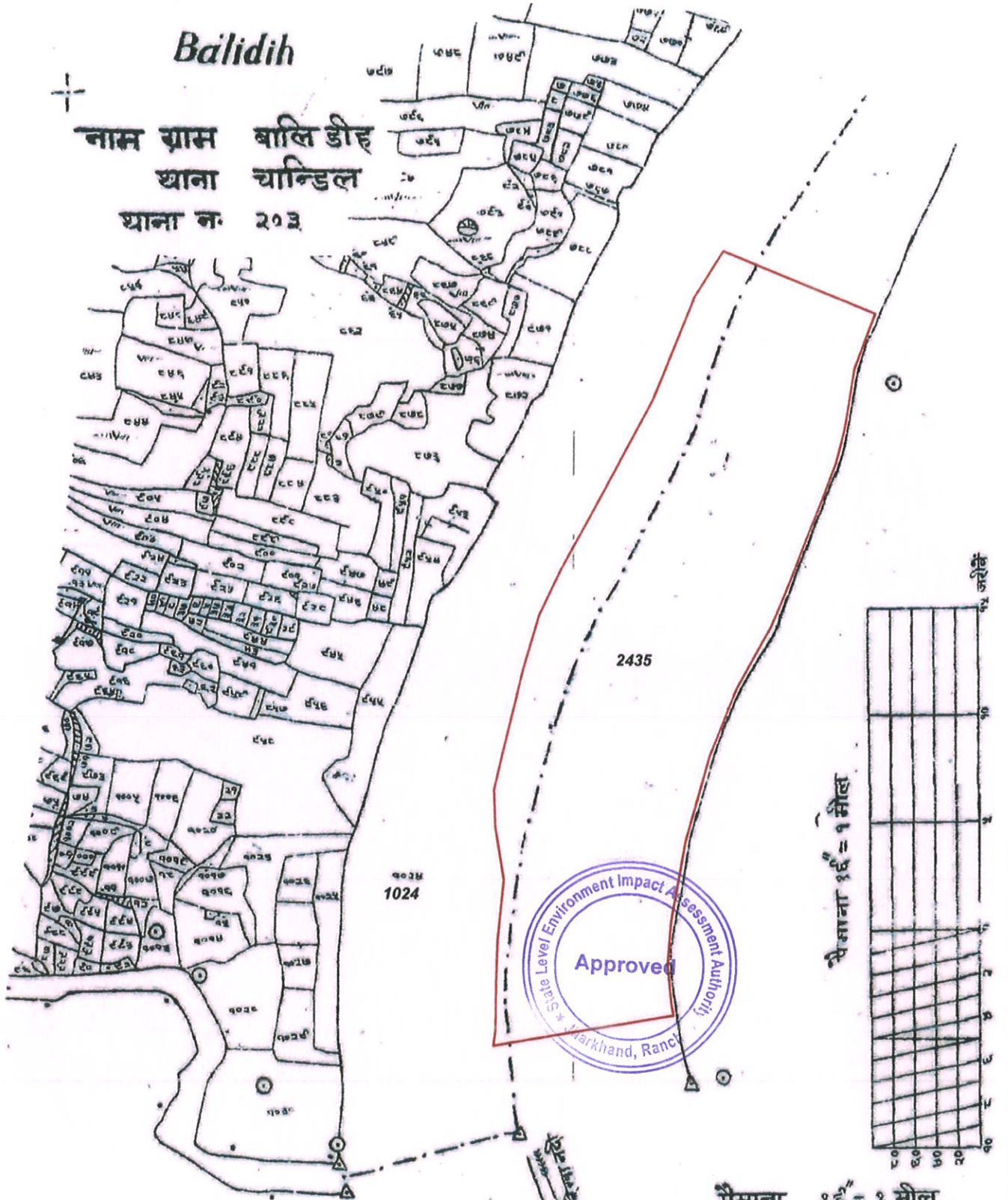
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 PLOT NO. 1846(P)/468, AREA - 2.08 HA.

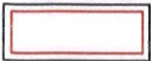



Balidih

नाम ग्राम बालि डीह
थाना चान्दिल
थाना नं. 203



INDEX

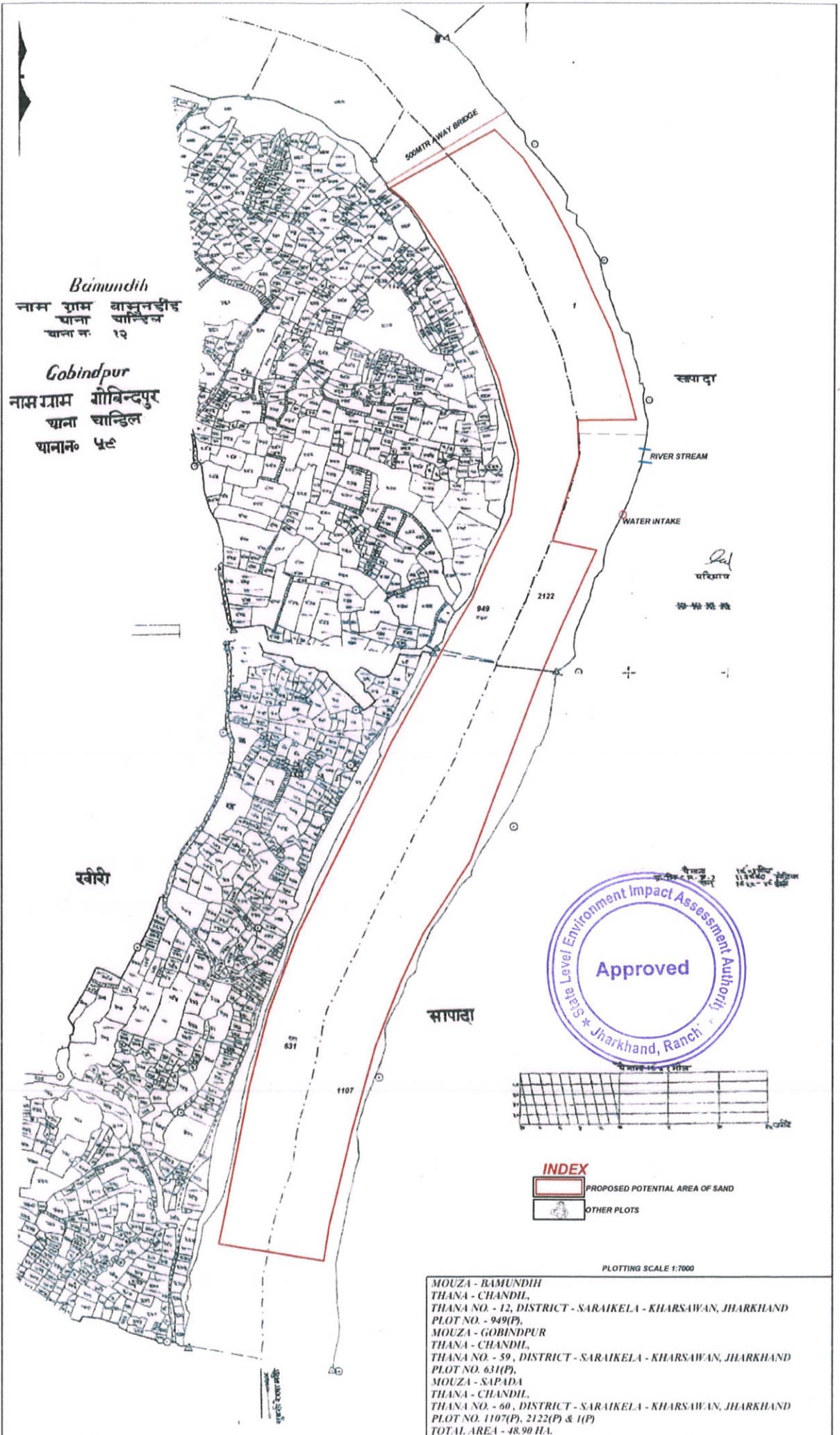
-  PROPOSED POTENTIAL AREA OF SAND
-  OTHER PLOTS



MOUZA - BALIDIH
THANA - CHANDIL,
THANA NO. - 203, DISTRICT - SARAIKELA - KHARSAWAN, JHARKHAND
PLOT NO. 1024(P) & 2435(P), AREA - 12.91 HA.
As Per C.O Letter- 1024 & 06

पैमाना १ ई = १ मील
प्र. भि. (R. F) १ : २५०० (मीट्रिक)
सन १९५८-५९ ईस्वी

Bamundih
 नाम ग्राम वासुन्डीह
 थाना चान्दिल
 थाना नं १२

Gobindpur
 नामग्राम गोविन्दपुर
 थाना चान्दिल
 थाना नं ५६



INDEX
 PROPOSED POTENTIAL AREA OF SAND
 OTHER PLOTS

PLOTTING SCALE 1:7000

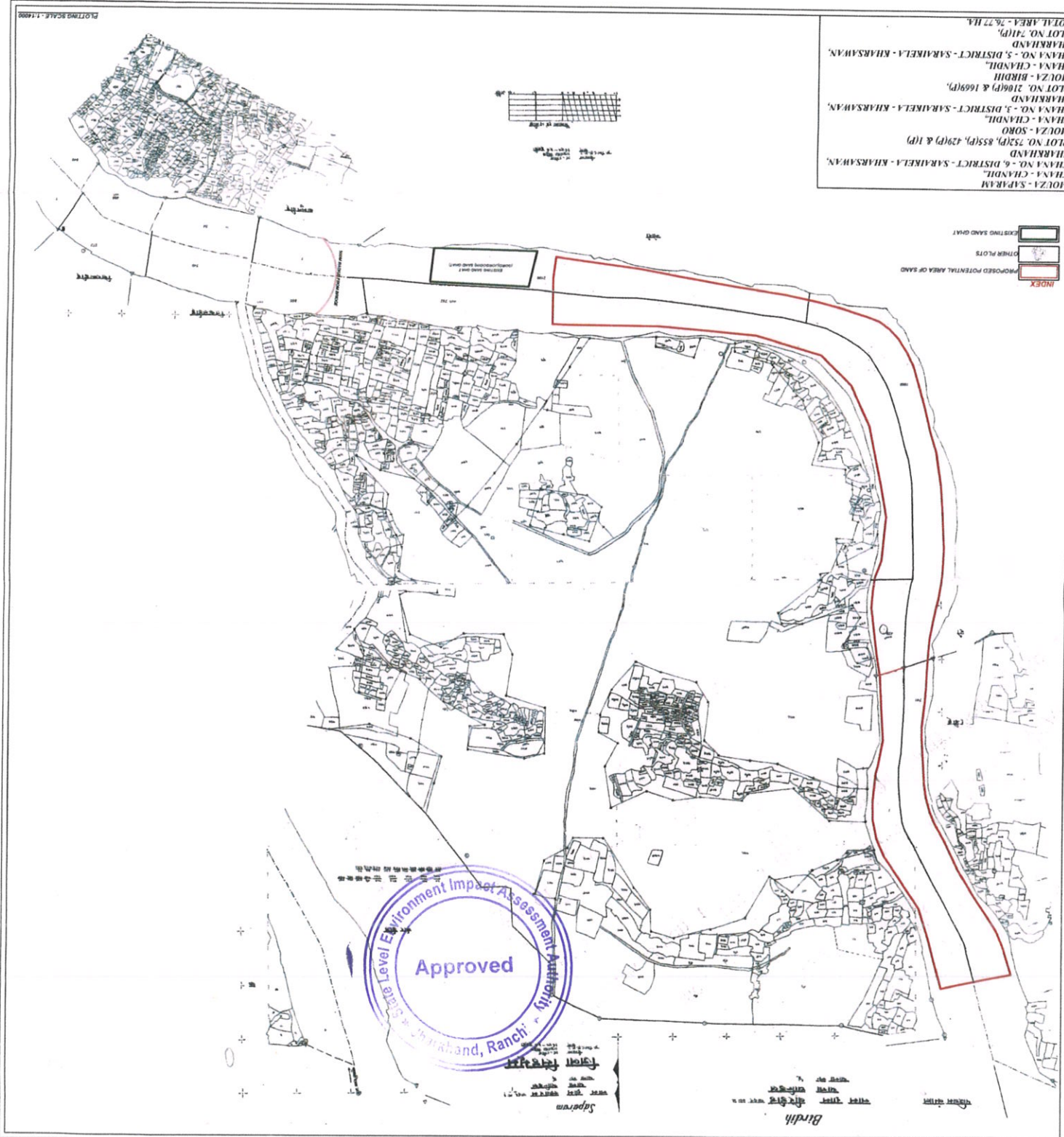
MOUZA - BAMUNDIH
 THANA - CHANDIL,
 THANA NO. - 12, DISTRICT - SARAIKELA - KHARSAWAN, JHARKHAND
 PLOT NO. - 949(P),
 MOUZA - GOBINDPUR
 THANA - CHANDIL,
 THANA NO. - 59, DISTRICT - SARAIKELA - KHARSAWAN, JHARKHAND
 PLOT NO. 631(P),
 MOUZA - SAPADA
 THANA - CHANDIL,
 THANA NO. - 60, DISTRICT - SARAIKELA - KHARSAWAN, JHARKHAND
 PLOT NO. 1107(P), 2122(P) & 1(P)
 TOTAL AREA - 48.90 HA.

PLOTTING SCALE - 1:1000

MOZA - SAPARNA
 THANA - CHANDIL
 THANA NO. - 6, DISTRICT - SARAIKELA - KHARSAWAN
 PLOT NO. 752(P), 855(P), 429(P) & 1(P)
 THANA - CHANDIL
 THANA NO. - 5, DISTRICT - SARAIKELA - KHARSAWAN
 PLOT NO. 2166(P) & 1669(P)
 MOZA - BARDI
 THANA - CHANDIL
 THANA NO. - 5, DISTRICT - SARAIKELA - KHARSAWAN
 PLOT NO. 711(P)
 THANA - CHANDIL
 THANA NO. - 5, DISTRICT - SARAIKELA - KHARSAWAN
 TOTAL AREA - 76.77 HA

INDEX

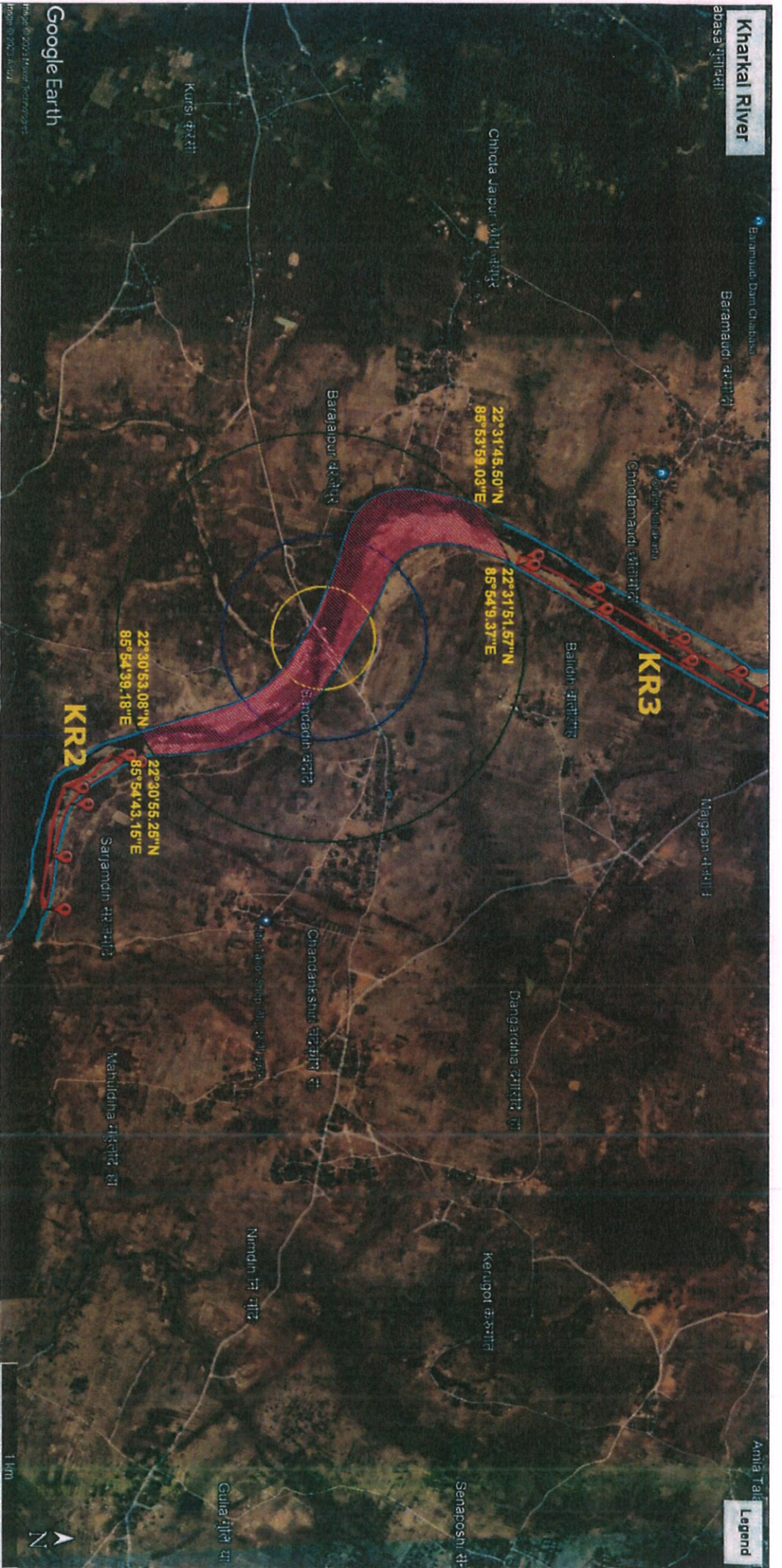
- PROPOSED POTENTIAL AREA OF SAND
- OTHER PLOTS
- EXISTING SAND QUAT



ANNEXURE-05





NO MINING ZONE MAP OF **SAND GHAT**



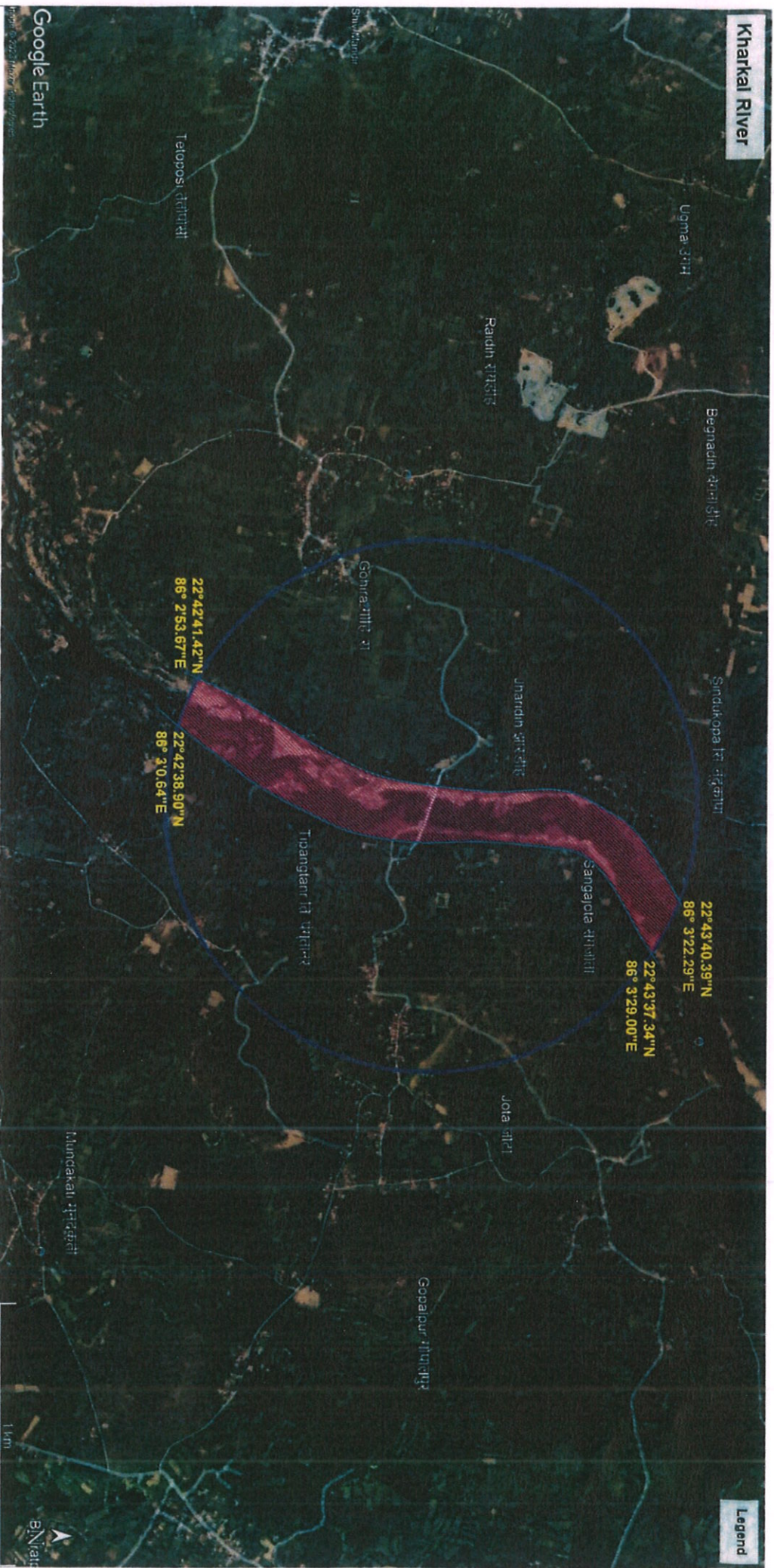


Google Earth

MAP SHOWING NO MINING ZONE AT KHARKAI RIVER, SARAIKELA-KHARSAWAN DISTRICT, JHARKHAND

-  NO MINING ZONE
-  250M BUFFER ZONE
-  500M BUFFER ZONE
-  1KM BUFFER ZONE





Kharkai River

Legend

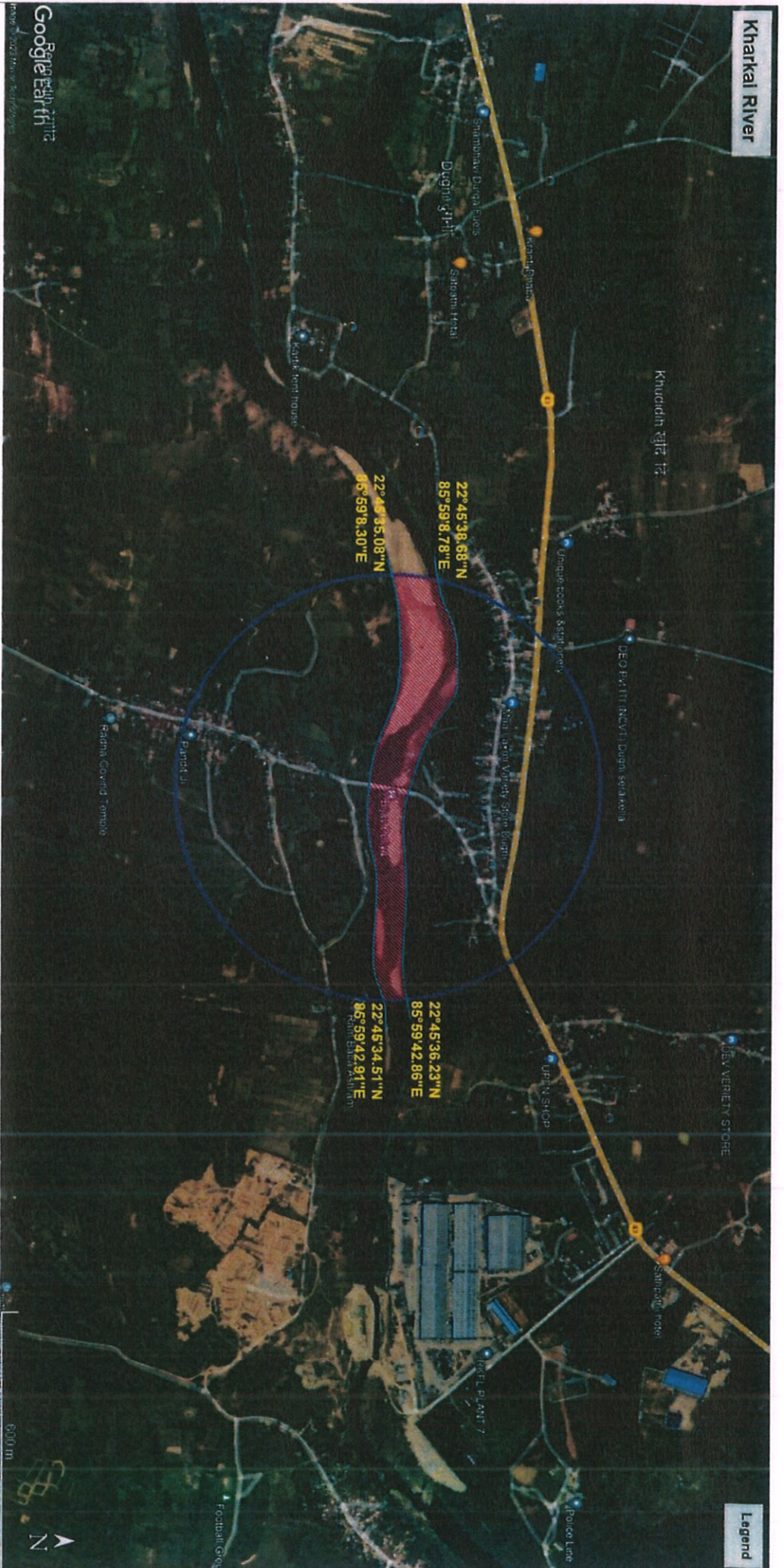
-  NO MINING ZONE
-  1KM BUFFER ZONE

MAP SHOWING NO MINING ZONE AT KHARKAI RIVER, SARAIKELA-KHARSAWAN DISTRICT, JHARKHAND

Approved

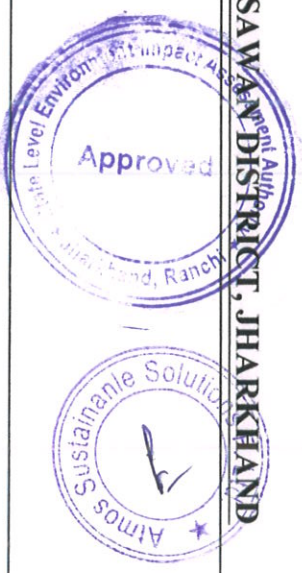
Atmos Sustainable Solutions P. Ltd.

Google Earth



MAP SHOWING NO MINING ZONE AT KHARKAI RIVER, SARAIKELA-KHARSAWAN DISTRICT, JHARKHAND

-  NO MINING ZONE
-  1KM BUFFER ZONE



6000m

Google Earth

ANNEXURE-06

ROUTE MAP OF SAND GHAT



Potential Area

Kharkai River

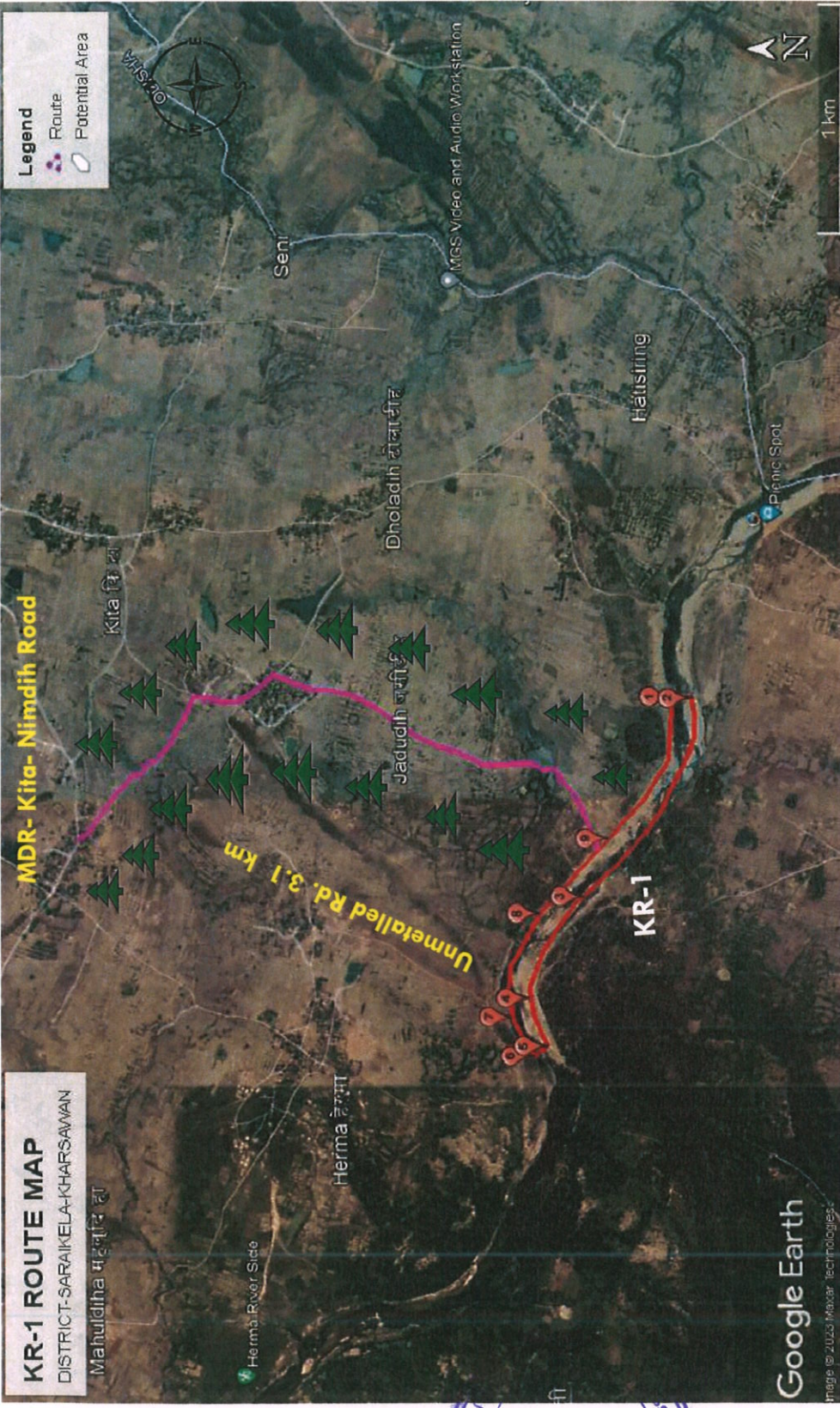
Mettalled Road

Unmetalled Road

Plantation

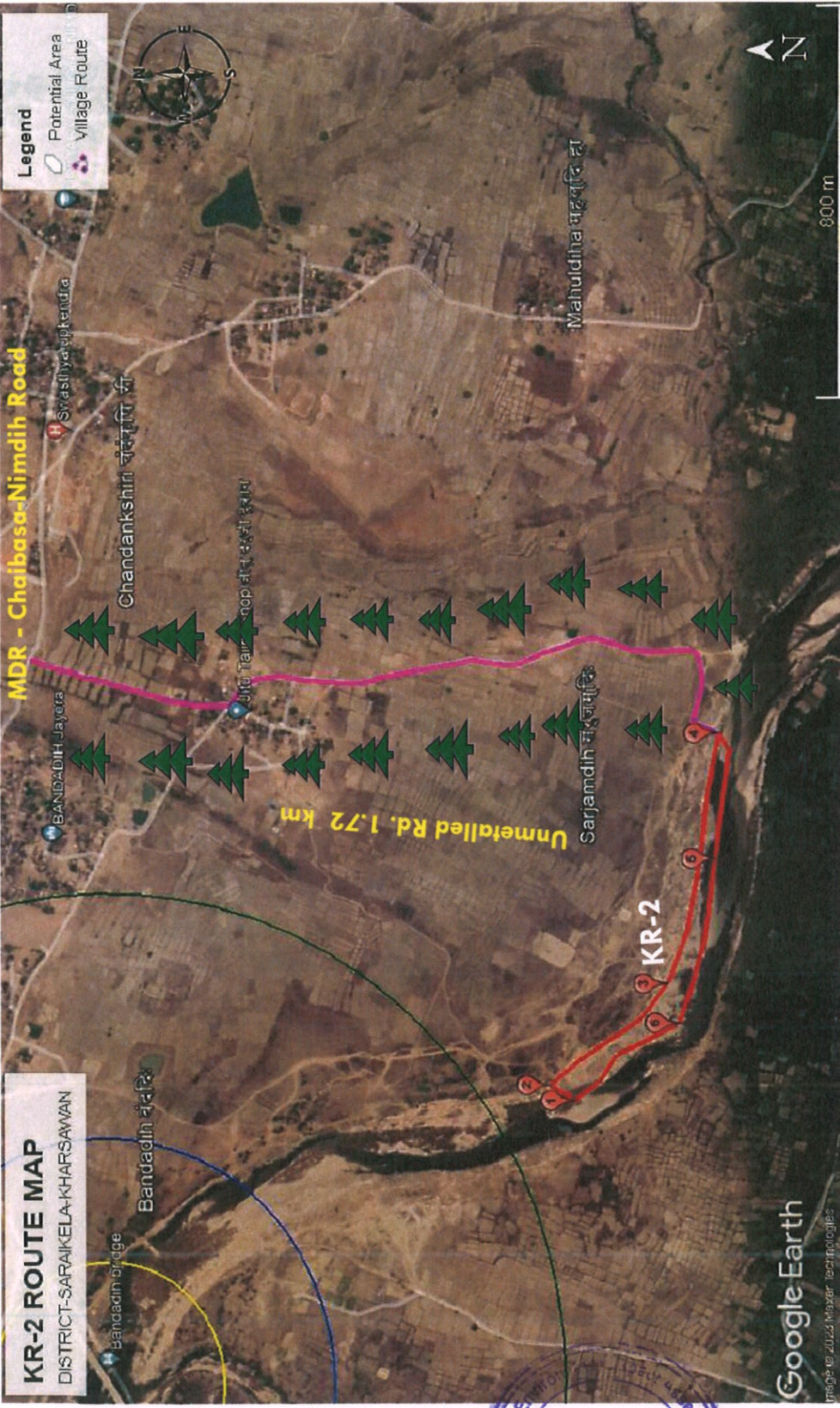
Geo-Coordinates:
 22°29'21.06"N
 85°57'14.53"E

Atmos Sustainability Solutions P. Ltd.
Approved
Jharkhand, Ranchi
Government of Jharkhand



Route Map of Sand Ghat of Proposed Site

	Water body
	No High Tension Line
	Metalled road
	Human Settlement
	No Religious Places
	No Archaeological Site
	www.dbaridg.org



KR-2 ROUTE MAP
DISTRICT-SARAIKELA-KHARSAWAN

Potential Area

Kharkai River

Metalled Road

Unmetalled Road

Plantation

Geo-Coordinates:
22°30'48.53"N
85°54'43.09"E

Route Map of Sand Ghat of Proposed Site

	Water body
	No High Tension Line
	Metalled road
	Human Settlement
	No Religious Places
	No Archaeological Site
	www.No.Dredging.org

Potential Area

Kharkai River

Metalled Road

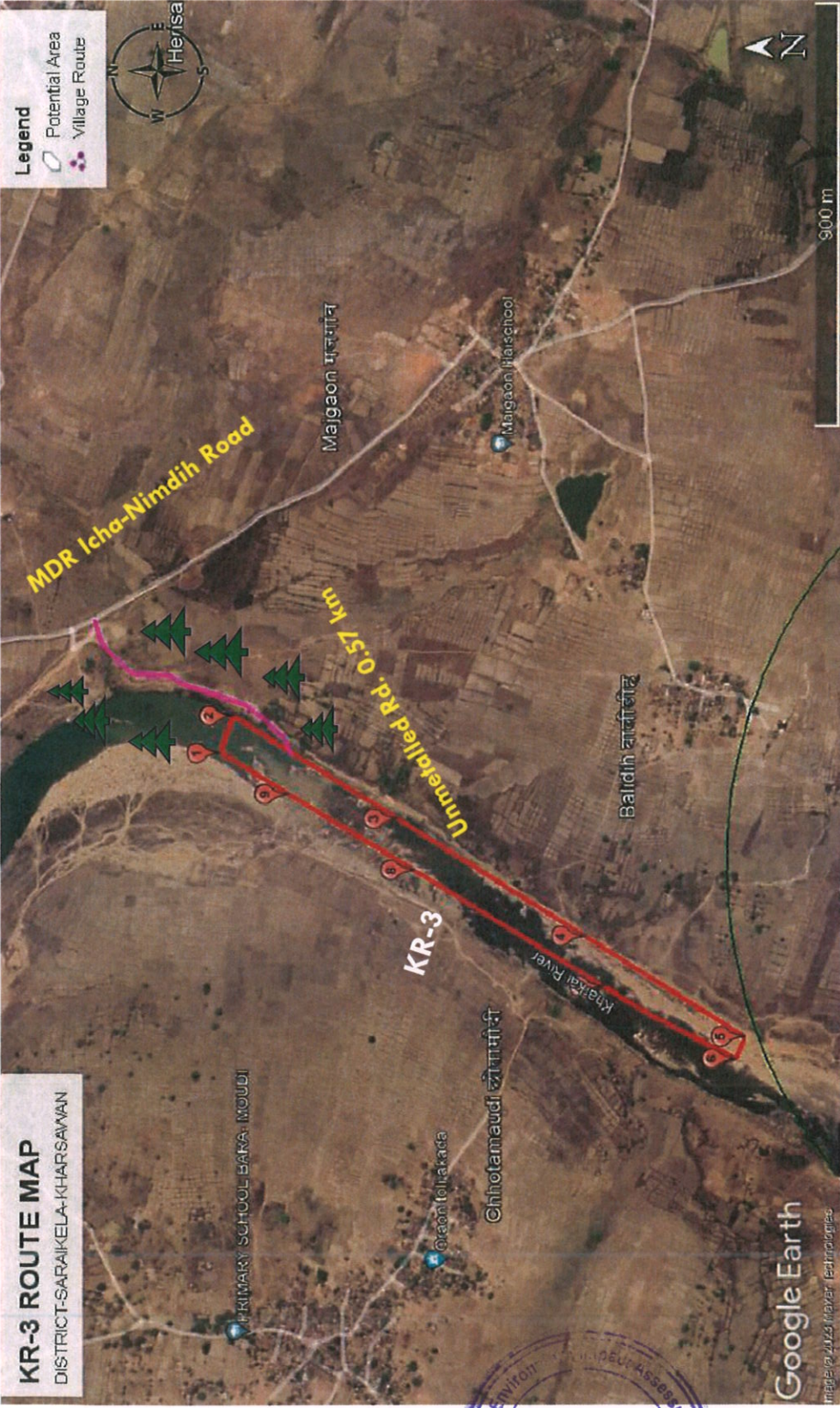
Unmetalled Road

Plantation

Geo-Coordinates:
 22°32'32.02"N
 85°54'31.05"E

Approved
 State Level Environ. Impact Assessment
 Ministry of Environment, Govt. of India

Amos Sustainable Solutions Pvt. Ltd.



Route Map of Sand Ghat of Proposed Site

Water body

No High Tension Line

Metalled road

Human Settlement

No Religious Places

No Archaeological Site

INDIA
www.Daridg.org

Potential Area

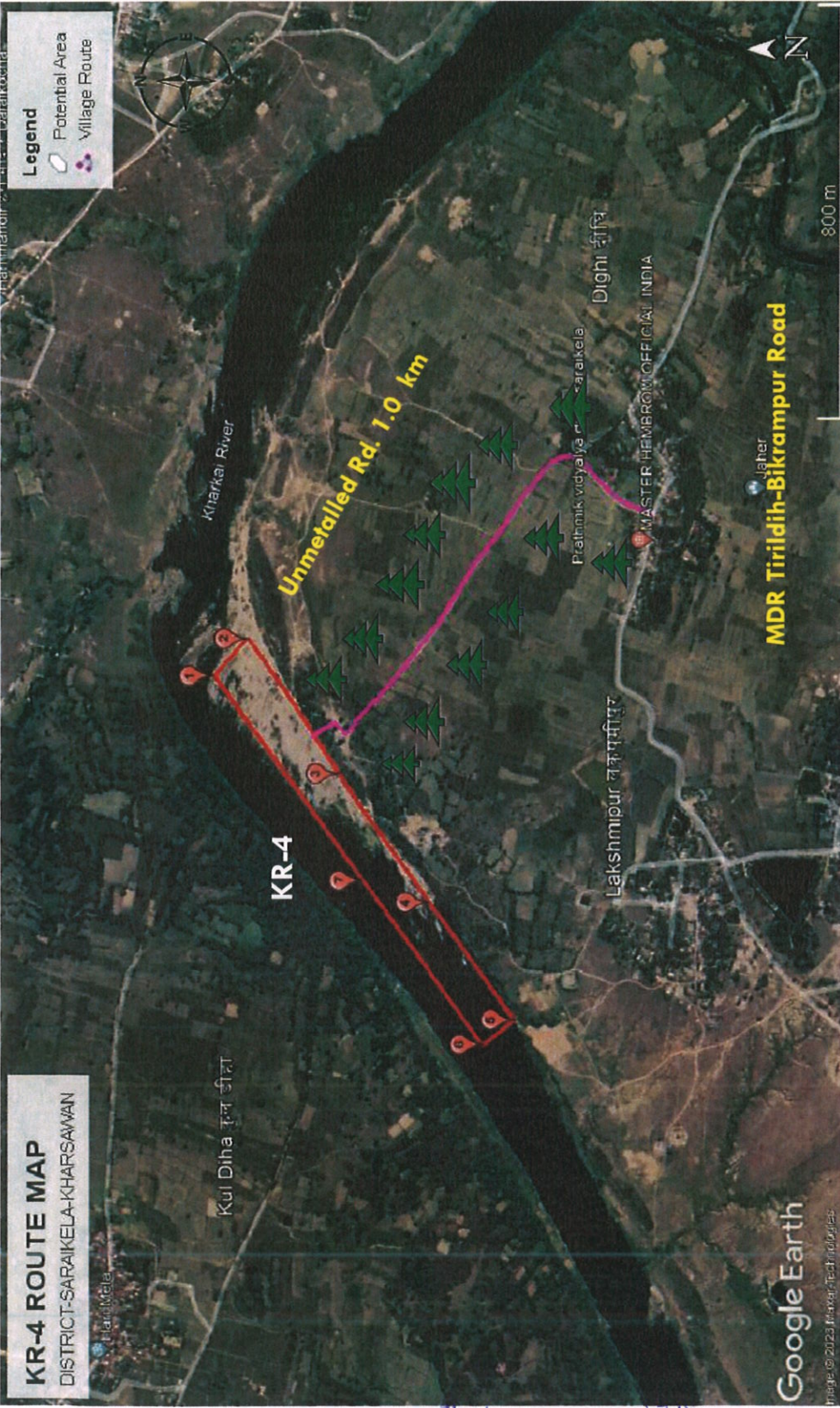
Kharkaj River

Mettalled Road

Unmettalled Road

Plantation

Geo-Coordinates:
 22°41'56.78"N
 85°58'34.23"E



Route Map of Sand Ghat of Proposed Site

Water body

No High Tension Line

Metalled road

Human Settlement

No Religious Places

No Archaeological Site

www.dbrdg.org

Potential Area

Kharkai River

Mettalled Road

Unmetalled Road

Plantation

Geo-Coordinates:
 22°41'36.98"N
 85°59'20.12"E

Amos Sustainable Solution

Approved

Authority



Route Map of Sand Ghat of Proposed Site

	Water body
	No High Tension Line
	Metalled road
	Human Settlement
	No Religious Places
	No Archaeological Site
	www.No.Bridges.org

 Potential Area

 Kharkai River

 Metalled Road

 Unmetalled Road

 Plantation

Geo-Coordinates:
22°46'52.80"N
86°2'32.79"E




Route Map of Sand Ghat of Proposed Site

 Water body

 No High Tension Line

 Metalled road

 Human Settlement

 No Religious Places

 No Archaeological Site

 www.No.Dredging.org

Potential Area

Subarnarekha River

Mettalled Road

Unmetalled Road

Plantation

Geo-Coordinates:
 22°55'43.04"N
 86°0'52.50"E

Amos Sustainable Solutions P. Ltd.
State Level Environment
Approved



Route Map of Sand Ghat of Proposed Site

Water body

No High Tension Line

Metalled road

Human Settlement

No Religious Places

No Archaeological Site

www.district.org

Potential Area

Subarnarekha

Metalled Road

Unmetalled Road

Plantation

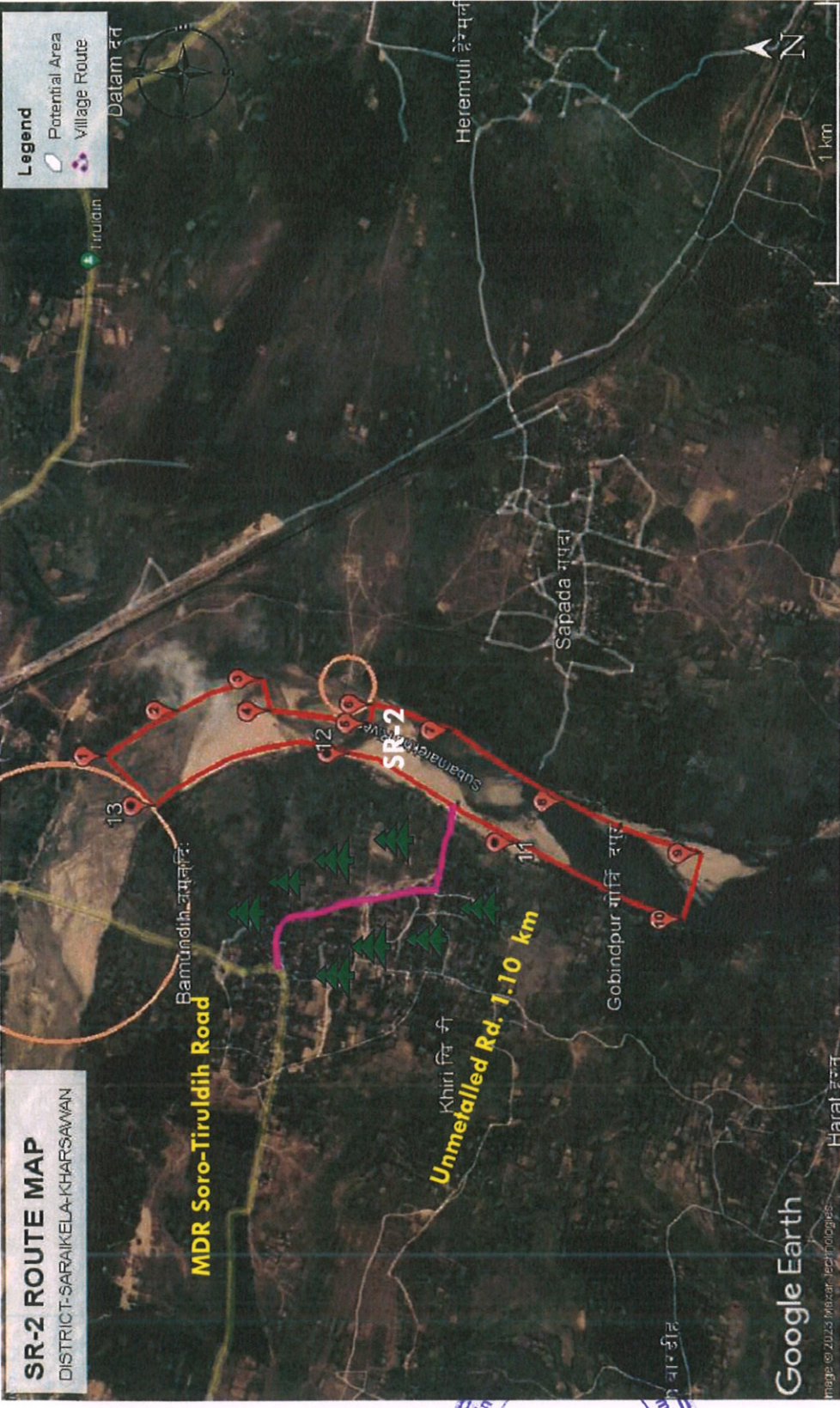
Geo-Coordinates:
 23°7'32.23"N
 85°55'47.10"E

Approved

State Level Environment Clearance

Rural Development Authority

Atmosphere Solutions Pvt. Ltd.



Route Map of Sand Ghat of Proposed Site

Water body

No High Tension Line

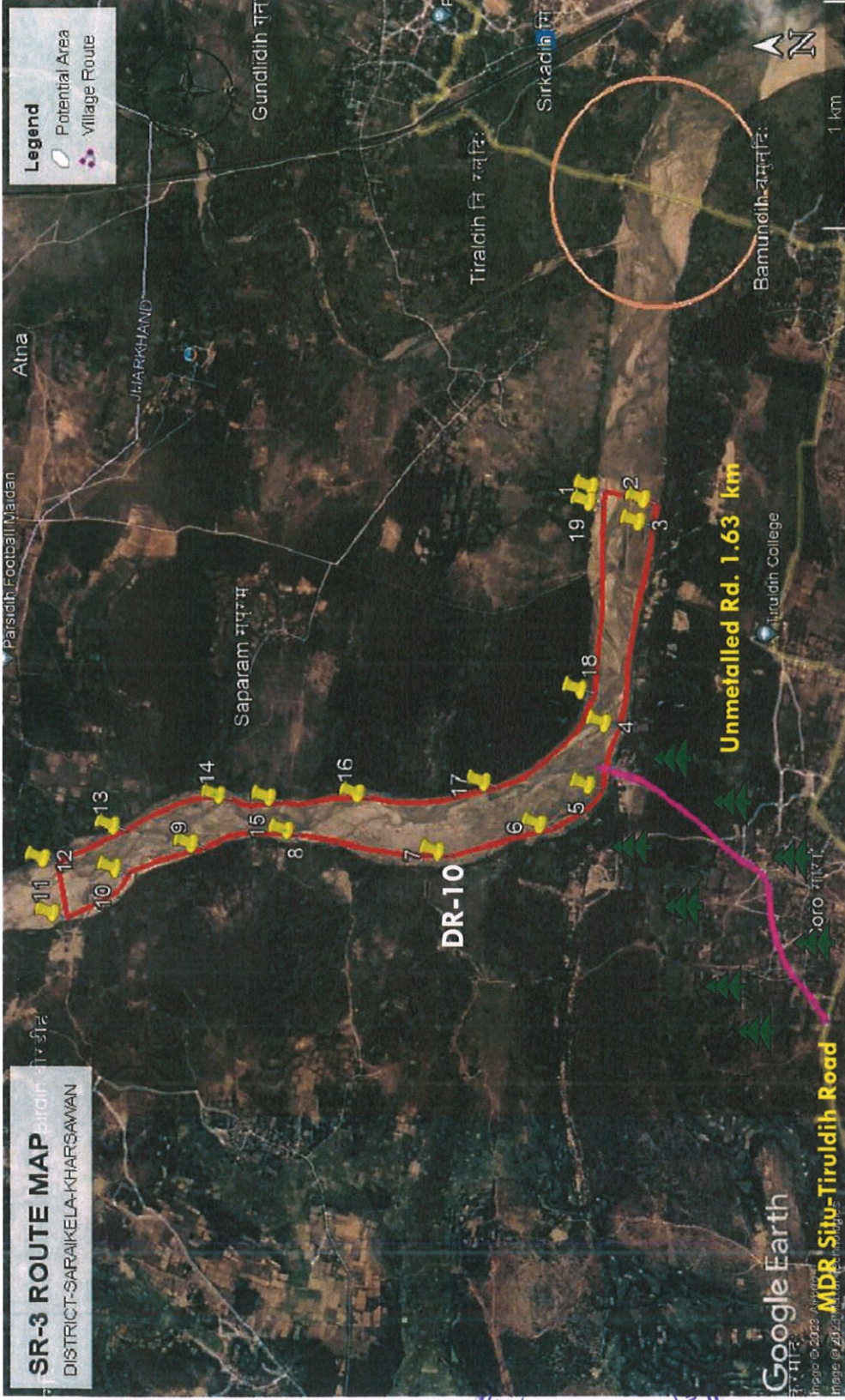
Metalled road

Human Settlement

No Religious Places

No Archaeological Site

INDIA
www.Daridh.org



Potential Area

Subarnarekha River

Metalled Road

Unmetalled Road

Plantation

Geo-Coordinates:
 23°7'46.13"N
 85°54'42.85"E

Approved
 State Level
 Amos Sustainable Solutions Pvt. Ltd.

Route Map of Sand Ghat of Proposed Site

	Water body
	No High Tension Line
	Metalled road
	Human Settlement
	No Religious Places
	No Archaeological Site
	www.Zee24x7HD.org

ANNEXURE-07

COPY OF ZOOLOGICAL **SURVEY OF INDIA LETTER**



Government Of Jharkhand,
Department of Industry, Mines & Geology,
District Mining Office, Seraikella-Kharsawan
Letter No - 36 /M, Date 18/1/23

To,

The Director,
Gangetic Plains Regional Centre,
Zoological Survey of India,
Bahadurpur Housing Colony,
Sec-8, Patna- 800026, Bihar,

Subject: - Request to provide details regarding the presence of aquatic animal in the river Subarnarekha & Kharkai River of Saraikela-Kharsawan and proposed potential area of sand enlisted in Saraikela-Kharsawan district Jharkhand.

Sir,

With reference to the above-mentioned subject, we would like to bring to your notice that, the work for the preparation of district survey report for Sand Mineral of Saraikela-Kharsawan is in progress.

As per direction given by SEAC, Jharkhand were quire to submit the undertaking regarding presence of aquatic animal in the river in proximity of the proposed potential area of sand should be verified and certified by concerned Govt. Departments like Zoological survey of India.

It is therefore requested to provide the details of presence of aquatic animal in the river in proximity of the proposed potential area of sand in DSR(District Survey Report).

We are enclosing details of proposed sand ghat along with Geo-coordinates for your reference.



Yours faithfully


18.1.23.
District Mining Officer
Saraikela-Kharsawan

**Government Of Jharkhand,
Department of Industry, Mines & Geology,
District Mining Office, Seraikella-Kharsawan**

Letter No - -----/M, Date -----

To,

The Director,
Gangetic Plains Regional Centre,
Zoological Survey of India,
Bahadurpur Housing Colony,
Sec-8, Patna- 800026, Bihar,

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It is therefore requested to provide the details of presence of aquatic animal in the river in proximity of the proposed potential area of sand in DSR(District Survey Report).

We are enclosing details of proposed sand ghat along with Geo-coordinates for your reference.

Yours faithfully

Sd/-

District Mining Officer
Saraikela-Kharsawan

Memo No 36 -----/M, date 18/1/23 -----

Copy to :- The Director, Zoological Survey of India, Prani Vigyan Bhawan, Block M, New, New Alipore, Kolkata, West Bengal-700053 for kind information and necessary action




18.1.23
District Mining Officer
Saraikela-Kharsawan

ANNEXURE-08

COPY OF FISHERY **DEPARTMENT LETTER**



पत्रांक..... मत्स्य / सरायकेला-खरसावाँ

दिनांक.....

प्रेषक,

जिला मत्स्य पदाधिकारी,
सरायकेला-खरसावाँ।

सेवा में,

सहायक निदेशक, भूतत्व
जिला भूतात्विक कार्यालय,
सरायकेला-खरसावाँ।

विषय :- जलीय जीवों के सूचना प्रेषण के संबंध में।

प्रसंग :- आपका पत्रांक-206, दिनांक 03.02.2023

महाशय,

उपर्युक्त विषयक एवं प्रसंगाधिन विषय के संबंध में कहना है कि सरायकेला-खरसावाँ जिला अन्तर्गत नदियों/जल निकायों में पायी जानी वाली मछलियों की सूची निम्न प्रकार से है :-

Sl.No.	River/Area Details	Available Fishes
1	Subarnarekha River / Kharkai	<i>Acanthocobitis batia</i>
2	River/Other Water Sources of	<i>Amblyceps mangois</i>
3	Seraikella-Kharsawan	<i>Amblypharyngodon mola</i>
4		<i>Anabas cobojius</i>
5		<i>Anguilla bengalensis bengalensis</i>
6		<i>Aplocheilus panchax</i>
7		<i>Bagarius bagarius</i>
8		<i>Barilius barila</i>
9		<i>Barilius barna</i>
10		<i>Barilius bendelisis</i>
11		<i>Chagunius chaguniu</i>
12		<i>Chanda nama</i>
13		<i>Channa orientalis</i>
14		<i>Channa punctatus</i>
15		<i>Chela cadius</i>
16		<i>Cirrhinus mrigala</i>
17		<i>Cirrhinus reba</i>
18		<i>Clarias batrachus</i>
19		<i>Chupisoma garua</i>
20		<i>Crossocheilus latius</i>
21		<i>Cyprinus carpio</i>
22		<i>Dario danio</i>
23		<i>Dario devineo</i>



[Handwritten signature]

[Handwritten number 134]

24	
25	<i>Esomus danricus</i>
26	<i>Gagata cenia</i>
27	<i>Gambusia affinis</i>
28	<i>Garra annandalei</i>
29	<i>Garra gotyla</i>
30	<i>Garra lamta</i>
31	<i>Garra mullya</i>
32	<i>Garra nasuta</i>
33	<i>Glossogobius giuris</i>
34	<i>Glossogobius hoesei</i>
35	<i>Glossogobius spp</i>
36	<i>Glyptothorax coheni</i>
37	<i>Glyptothorax nelson</i>
38	<i>Heteropneustes fossilis</i>
39	<i>Hypophthalmichthys molitrix</i>
40	<i>Labeo angra</i>
41	<i>Labeo bata</i>
42	<i>Labeo boga</i>
43	<i>Labeo calbasu</i>
44	<i>Labeo catla</i>
45	<i>Labeo dyocheilus</i>
46	<i>Labeo goniis</i>
47	<i>Labeo pangusia</i>
48	<i>Labeo rohita</i>
49	<i>Laguvia ribeiroi</i>
50	<i>Lepidocephalus guntea</i>
51	<i>Macrornathus aral</i>
52	<i>Macrornathus pancalus</i>
53	<i>Mastacembelus armatus</i>
54	<i>Myastus aor</i>
55	<i>Myastus armatus</i>
56	<i>Myastus bleekeri</i>
57	<i>Myastus gulio</i>
58	<i>Myastus tengra</i>
59	<i>Mystus cavasius</i>
60	<i>Nandus nandus</i>
61	<i>Nemacheilus spp</i>
62	<i>Notopterus chitala</i>
	<i>Notopterus notopterus</i>

[Handwritten signature]

[Handwritten initials]



63	<i>Notopterus notopterus</i>
64	<i>Osteobrama cotio</i>
65	<i>Pangasius pangasius</i>
66	<i>Parambassis ranga</i>
67	<i>Puntius chola</i>
68	<i>Puntius conchonius</i>
69	<i>Puntius sarama</i>
70	<i>Puntius sophore</i>
71	<i>Puntius ticto</i>
72	<i>Puntius spp</i>
73	<i>Rhinomugil corsula</i>
74	<i>Rita rita</i>
75	<i>Sperata aor</i>
76	<i>Sperata seenghala</i>
77	<i>Tilapia oreochromis</i>
78	<i>Xenentodon cancila</i>

Sl.No.	River/Area Details	Available Crustaceans
1	Subarnarekha River / Kharkai River/Other Water Sources of Seraikella-Kharsawan	<i>Macrobrachium lanmarei</i>
2		<i>Macrobrachium kistnense</i>
3		<i>Macrobrachium tiwari</i>
4		<i>Macrobrachium choprai</i>
5		<i>Barytelphusa cunicularis</i>
6		<i>Barytelphusa guerini</i>
7		<i>Vereena litterata</i>

अन्य जलीय जीवों के पाये जाने के संबंध में कार्यालय द्वारा कोई विवरणी संधारित नहीं किया गया है।

विश्वासभाजन
 ४०
 जिला मत्स्य पदाधिकारी
 सरायकेला-खरसावाँ।

ज्ञापांक : 107 / मत्स्य / सरायकेला-खरसावाँ, दिनांक : 20 / 02 / 23
 प्रतिलिपि: जिला खनन पदाधिकारी, सरायकेला-खरसावाँ को सूचनार्थ एवं आवश्यक कार्रवाई हेतू प्रेषित।



20/02/23
 जिला मत्स्य पदाधिकारी
 सरायकेला-खरसावाँ।

ANNEXURE-09

COPY OF NEWS PAPER

CUTTING



A.A
A.A.S.

प्रभात खबर

दिनांक - 21/01/2023 (शनिवार)

प्रभात खबर

जिला खनन कार्यालय, सरायकेला-खरसावाँ
(खनन शाखा)

::: आवश्यक सूचना :::

एतद द्वारा सर्वसाधारण को सूचित किया जाता है कि सरायकेला-खरसावाँ जिले का बालू खनिज का District Survey Report (जिला सर्वेक्षण रिपोर्ट) सरायकेला-खरसावाँ जिले के जिले के Website में प्रकाशित किया गया है। उक्त DSR, Enforcement and Monitoring Guidelines for Sand Mining, 2020 के तहत आम जनता को उपलब्ध कराई जाती है।

अतएव उक्त के संबंध में यदि कोई आपत्ति/सुझाव हो, तो 30 दिनों के अन्दर अपनी आपत्ति/सुझाव किसी भी कार्य दिवस में जिला खनन कार्यालय, सरायकेला-खरसावाँ अथवा email - dmo-saraikeला@jharkhandmail.gov.in पर प्रेषित करने की कृपा करें।

PR.NO.287938 Mines and Geology(22-23):D

जिला खनन प्रबन्धिका,
सरायकेला-खरसावाँ।

SWACHH
SURVEKSHAN



75
Azadi Ka
Amrit Mahotsav



कार्यालय, नगर पंचायत सरायकेला

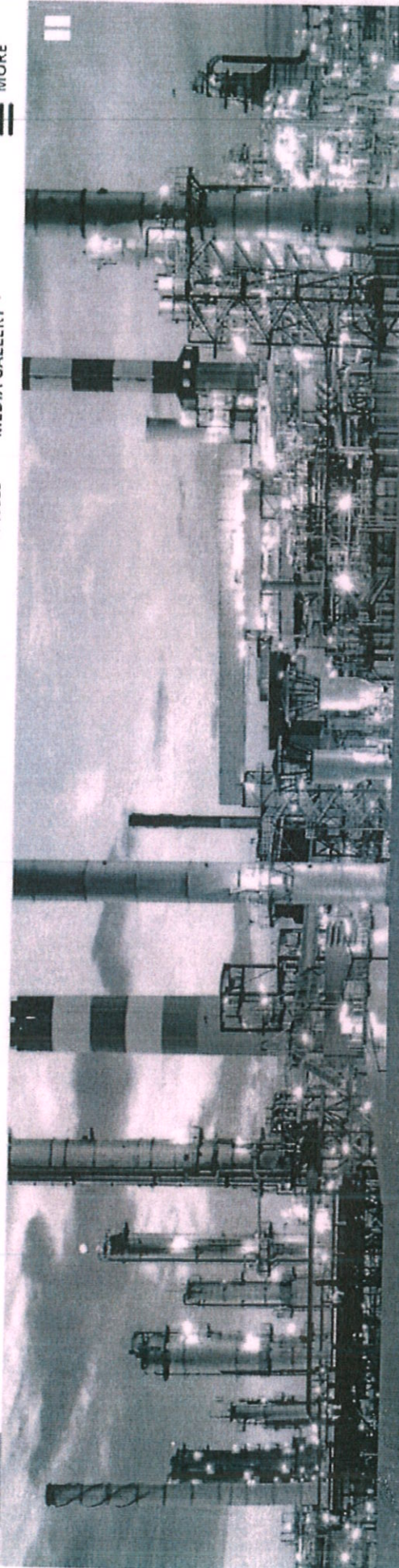


ANNEXURE-10

COPY OF NIC D.C. UPLOAD
SCREEN SHOT



HOME COVID-19 ABOUT DISTRICT DIRECTORY DEPARTMENTS TOURISM DOCUMENTS NOTICES MEDIA GALLERY MORE



Industries

District survey report of river bed sand mining with potential area for seraikela-kharsawan district, Jharkhand

[Click here for Voter Awareness Contest - 2022](#)

National Tobacco Control Programme



ANNEXURE-11

COPY OF SUB-DIVISIONAL **COMITTE LETTER**



उपायुक्त का कार्यालय, सरायकेला-खरसावाँ
(खनन शाखा)

:: आदेश ::

मननीय उच्चतम न्यायालय, नई दिल्ली द्वारा Civil Appeal No - 3661 - 3662 / 2020 State of Bihar & Others Vrs Pawan Kumar & Others के मामले में पारित आदेश दिनांक 10.11.2021, Sustainable Sand Mining Guidelines, 2016 तथा Enforcement and Monitoring Guidelines for Sand Mining 2020 के तहत NABET से मान्यता प्राप्त Consultant द्वारा बालू खनिज का DSR तैयार किया जाना है ।

2. सरायकेला-खरसावाँ जिला हेतु बालू का DSR खान एवं भूतत्व विभाग, झारखण्ड राँची से प्राप्त कार्यदेश के आलोक में M/s Atmos Sustainable Solution Private Limited द्वारा तैयार कर सहायक निदेशक भूतत्व, जिला भूतात्विक कार्यालय, सरायकेला-खरसावाँ के माध्यम से उपलब्ध कराया गया है । उक्त DSR को उपरोक्त Guidelines के तहत जिले के अधिकारिक वेबसाइट पर निर्धारित अवधि के लिए अपलोड भी किया गया है ।

3. उल्लेखनीय है कि उक्त DSR को SEIAA, Ranchi को अनुमोदनार्थ प्रेषित किए जाने से पूर्व जिला स्तर पर समिति द्वारा DSR की Vetting की जानी है । अतएव अग्रेतर आवश्यक कार्रवाई किए जाने हेतु अद्योहस्ताक्षरी की अध्यक्षता में निम्नवत समिति का गठन किया जाता है :-

- i) वन प्रमण्डल पदाधिकारी, सरायकेला-खरसावाँ ।
- ii) अनुमण्डल पदाधिकारी, सरायकेला / चाण्डल ।
- iii) जिला खनन पदाधिकारी, सरायकेला-खरसावाँ ।
- iv) सहायक निदेशक, भूतत्व जिला भूतात्विक कार्यालय, सरायकेला-खरसावाँ ।
- v) कार्यपालक अभियन्ता, लधु सिंचाई प्रमण्डल, सरायकेला ।
- vi) क्षेत्रीय पदाधिकारी, झारखण्ड राज्य प्रदूषण नियंत्रण पर्वद, आदित्यपुर, जमशेदपुर ।


4. अतएव इस आदेश पत्र के साथ DSR संलग्न करते हुए निदेश दिया जाता है कि उक्त के निमित्त आवश्यक सुझाव / मंतव्य / संशोधन के साथ समिति की आगामी बैठक में भाग लेने की कृपा की जाय, ताकि उक्त बैठक में DSR को अंतिम रूप दे कर SEIAA, Ranchi को अनुमोदनार्थ भेजी जा सके ।

अनुलग्नक :- यथोक्त ।



ह/-
जिला दण्डाधिकारी
- सह -
उपायुक्त,
सरायकेला-खरसावाँ ।

ज्ञापांक124...../एम०, दिनांक 21/2/23.....
प्रतिलिपि :- सभी संबंधित को सूचनार्थ एवं आवश्यक कार्रवाई हेतु प्रेषित ।


जिला दण्डाधिकारी
- सह -
उपायुक्त,
सरायकेला-खरसावाँ ।

ANNEXURE-12

INDIVIDUAL TOPOSHEET MAP OF SURVEY OF INDIA



**POTENTIAL AREA OF SAND AT KHARKAI RIVER,
DISTRICT - SARAIKELA - KHARSAWAN,
OSM TOPOSHEET NO. F45H15**



INDEX

- PROPOSED POTENTIAL AREA
- KR-1 AREA - 18.60 HA



SCALE - 1:1500

Express highway with rail, with bridge, with distance stone		Temples, Ghats, Chhatra, Mosque, Jagan, Torii, Graves	
Roads, metalled, according to importance		Lighthouses, Lightships, Buoys, lighted, unlighted, Anchorage	
Roads, double cartway, according to importance		Mine, Wire on hills, Great, Stone	
Unmetalled road, Cart track, Rick track with pass, Foot path		Palms, palmiya, other, Paribar, Conifer, Bamboo, Other trees	
Streams with track in bed, undrained, Canal		Areas, cultivated, wooded, Surveyed lines	
Dams, masonry or rock-filled, earthwork, Weir		Boundary, international	
River, dry with water channel, with sand & rocks, Tidal river		State demarcated, undemarcated	
Railway, double, single, Steam, Road		district, subdivision, land or blue, forest	
Wells, hand, unlined, Tube well, Spring, Tanks, perennial, dry		Boundary, others, surveyed, uncoloured	
Embankments, road or rail, tank, Broken ground		heights, triangulation station, point, approximate	
Railways, double gauge, double, single with station, under construction		Bench-mark, geodetic, tertiary, cane	
Minor line or tramway, Kin, Cutting with tunnel		Post office, Telegraph office, Overhead tank	
Contours with sub-levels, Rocky slopes, Cliffs		Rail house or inspection building, Cabot house, Police station	
Sand features (Yellow, Green, red, permanent) (Blue, white, yellow)		Cemetary ground, Forest, reserved, protected	
Towns or Villages, (marked), deserted, Fort		Speed, various, semi-retrograde, locality or mine	
Hills, (marked), temporary, Tower, Airbase		Hospital, Dispensary, Veterinary, Hospital, Dispensary	
		Aerodrome, (marked), Tourist site	
		Power line, with pylons, surveyed, with poles, unsurveyed	

**POTENTIAL AREA OF SAND AT KHARKAI RIVER,
DISTRICT - SARAIKELA - KHARSAWAN,
OSM TOPOSHEET NO. F45H14**



INDEX

- PROPOSED POTENTIAL AREA
- KR-2 AREA - 3.68 HA



SCALE - 1:1500

Express highway with toll, with bridge, with drainage	Temples, Ghats, Ghum, Mosques, Jagan, Tombs, Graves	
Roads: metalled according to importance	Lighthouses, Lightship, Buoy, lighted, unlighted, Anchorage	
Roads: double cartage way according to importance	Mans, Vine on hills, Grass, Scrub	
Unmetalled road, Cart-track, Rick-track with pass, Foot-path	Palms, palms, other, Plantain, Cane, Bamboo, Other trees	
Streams with track in bed, undefined, Canal	Areas: cultivated, wooded, Surveyed tree	
Dams: masonry or rock-filled, earthen, Weir	Boundary: international	
River: dry with water channels, with sand & rocks; Tidal river	Boundary: private, surveyed, unlocated	
Submerged rocks, Shoal, Swamp, Raft	Boundary: private, surveyed, unlocated	
Wells: lined, unlined, Tube-well, Spring, Tanks, perennial, dry	Heights, triangulated: station, point, approximate	
Embankments: road or rail, tank, Broken ground	Benchmark: geodetic, arbitrary, canal	
Railways: broad gauge, double, single with station, under constn.	Post office, Telegraph office, Overhead tank	
Railways, other gauges: double, single with diamond, stone, do.	Rail house or inspection bungalow, Casual House, Police station	
Mineral line or tramway: km, Cutting with tunnel	Gambling ground, Forest: reserved, protected	
Contours with sub-fauna: Rocky slopes, Cliffs	Spaced names: administrative, locality or tribal	
Sand features (1) (Red, Green, independent); (2) (dunes, shifting)	Hospital, Dispensary, Veterinary, Hospital / Dispensary	
Towns or Villages: inhabited, deserted, Fort	Aerodrome, Helipad, Tourist site	
Hubs: permanent, temporary, Tower, Anticline	Power line: with pylons surveyed, with poles unsurveyed	

**POTENTIAL AREA OF SAND AT KHARKAI RIVER,
DISTRICT - SARAIKELA - KHARSAWAN,
OSM TOPOSHEET NO. F45H14**



INDEX

- PROPOSED POTENTIAL AREA
- KR-3 AREA - 10.00 HA



SCALE - 1:1500

Express highway with toll, with bridge, with distance stone		Temple, Ghat, Ghumna, Mosque, Dargah, Tomb, Graves	
Roads, metalled according to importance		Lighthouse, Lightship, Buoy, lighted, unlighted, Anchorage	
Roads, double carriage way according to importance		Mine, Vire on trestle, Grass, Scrub	
Unmetalled road, Cart-track, Pack-track with pass, Foot-path		Palm, date, mango, other, Plantain, Conifer, Bamboo, Other trees	
Streams with track in bed, unconfined, Canal		Area, cultivated, wooded, Surveyed tree	
Dams, masonry or rock-filled, earthwork, Weir		Boundary, international	
River, dry with water channel, with sand & rocks, Tidal river		state demarcated, undemarcated	
Submerged rocks, Shoal, Swamp, Raft		district, subdivision, taluk or MUA, forest	
Weir, lined, unlined, Tube-well, Spring, Tanks, perennial, dry		Boundary pillars, surveyed, unlocated	
Embankments, road or rail, bank, Broken ground		Height, triangulated, station, point, approximate	
Railways, broad gauge, double, single with station, under constn		Bench-mark, geodetic, tertiary, canal	
Railways, other gauge, double, single with station, single, do		Post office, Telegraph office, Overhead tank	
Miscellaneous line or tramway, Kin, Cutting with tunnel		Rail house or inspection bungalow, Casual house, Police station	
Contours with sub-relief, Rocky slopes, Gullies		Gaming ground, Forest, reserved, protected	
Sand features (Mud) (Zoned) (Impervious) (Silt), (Swampy)		Special reserve, administrative, locality or tribal	
Towns or Villages, inhabited, deserted, Fort		Hospital, Dispensary, Veterinary, Hospital / Dispensary	
Hubs, permanent, temporary, Tower, Antennae		Aerodrome, heliport, Tourist site	
		Tower line, with pylons surveyed, with poles unsurveyed	

**POTENTIAL AREA OF SAND AT KHARKAI RIVER,
DISTRICT - SARAIKELA - KHARSAWAN,
OSM TOPOSHEET NO. F45H14**



INDEX

- PROPOSED POTENTIAL AREA
- KR-4 AREA - 8.10 HA



SCALE - 1:1500

Express highway with toll, with bridge, with distance signs	Simple Green Church Mosque Rajni Tomo Gravel	Light House Lightship Buoy Lighted, unlighted, Anchorage
Roads, metalled according to importance	Mine, Wire on poles, Grass, Scrub	Mine, Wire on poles, Grass, Scrub
Roads, double carriage way according to importance	Palm, palm, other, Pandan, Conifer, Bamboo, Other trees	Palm, palm, other, Pandan, Conifer, Bamboo, Other trees
Unmetalled road, Cart track, Rick track with pass, Foot path	Area cultivated, wooded, Surveyed tree	Area cultivated, wooded, Surveyed tree
Streams with track in bed, unconfined, Canal	Boundary international	Boundary international
Dam, masonry or rock-filled, earthwork, Weir	state demarcated, undemarcated	state demarcated, undemarcated
River dry with water channel, with sand & rocks, Tidal river	clad, subclad, forest or thicket, forest	clad, subclad, forest or thicket, forest
Submerged rocks, Shoal, Swamp, Roads	Boundary outline surveyed, unsurveyed	Boundary outline surveyed, unsurveyed
Wells lined, unlined, Tube well, Spring, Tanks, perennial, dry	Height, triangulated, station, point, aneroid, etc.	Height, triangulated, station, point, aneroid, etc.
Embankments, road or rail, tank, Broken ground	Bench-mark, geodetic, tertiary, canal	Bench-mark, geodetic, tertiary, canal
Railways, broad gauge, double, single with station, under constn	Post office, Telegraph office, Overhead tank	Post office, Telegraph office, Overhead tank
Railways, other gauges, double, single with distance signs, do	Rail house or inspection bungalow, Guard house, Poles station	Rail house or inspection bungalow, Guard house, Poles station
Mine, imp or tramway, Kin, Cutting with tunnel	Gravelly ground, Forest, reserved, protected	Gravelly ground, Forest, reserved, protected
Contours with sub-features, Rocky slopes, Cliffs	Spaced names, administrative, locality or tribal	Spaced names, administrative, locality or tribal
Sand features (flat, (2) sand (inspiration), (3) dunes, etc)	Hospital, Dispensary, Veterinary, Hospital / Dispensary	Hospital, Dispensary, Veterinary, Hospital / Dispensary
Towns or Villages, inhabited, deserted, Fort	Aerodrome, heliport, Tourist site	Aerodrome, heliport, Tourist site
Huts, permanent, temporary, Tower, Antenna	Power line, with pylons surveyed, with poles unsurveyed	Power line, with pylons surveyed, with poles unsurveyed

**POTENTIAL AREA OF SAND AT KHARKAI RIVER,
DISTRICT - SARAIKELA - KHARSAWAN,
OSM TOPOSHEET NO. F45H14**



INDEX

PROPOSED POTENTIAL AREA

KR-5 AREA - 5.70 HA



SCALE - 1:1500

Express highway with toll, with bridge, with drainage	temple, Ghain, Church, Mosque, Dargah, Tomb, Graves							
Roads, metalled, according to importance	Lighthouse, Lightship, Buoy, lighted, unlighted, Anchorage							
Roads, double carriageway according to importance	Mine, Vene on belts, Grass, Scrub							
Unmetalled road, Cart-track, Pack-track with pass, Foot path	Palm, palms, other, Plain, Conifer, Bamboo, Other trees							
Streams with track in bed, unforded Canal	Areas cultivated, wooded, Surveyed tris							
Dam, masonry or rock-fill, earthwork, Weir	Boundary international							
River, dry with water channels, with sand & rocks, Tidal river	state demarcated, undemarcated							
Submerged rocks, Shoal, Seaweed, Reefs	clad, not, subvision, forest or thicket, forest							
Walls, lined, unlined, Tube-well, Spring, Tanks, perennial, dry	Boundary of state, surveyed, unsurveyed							
Embankments, road or rail, bank, Broken ground	heights, triangulated, station, cone, approximates							
Railways, broad gauge, double, single with station, under constn.	Bench-mark, geodetic, arbitrary, canal							
Railways, other gauge, double, single with distance stone, do.	Post office, Telegraph office, Overhead tank							
Mineral line or tramway, Kiln, Cutting with tunnel	Rail house or inspection building, Great House, Police station							
Contours with sub-features, Rocky slopes, Gullies	Camping ground, Forest, reserved, protected							
Sand features (1) (Red, 2) (Green, 3) (Blue, 4) (Black)	Spaced names, administrative, locality or tribal							
Towns or Villages, inhabited, deserted, Fort	Hospital, Dispensary, Veterinary Hospital / Dispensary							
Huts, permanent, temporary, Tower, Anticline	Aerodrome, Island, Tourist site							
	Power line, with pylons surveyed, with poles unsurveyed							

**POTENTIAL AREA OF SAND AT KHARKAI RIVER,
DISTRICT - SARAIKELA - KHARSAWAN,
OSM TOPOSHEET NO. F4511**



INDEX

- PROPOSED POTENTIAL AREA
- KR-6 AREA - 2.08 HA

SCALE - 1:1500

Express highway with toll, with bridge, with overpass	Temple, Ghat, Church, Mosque, Jagan, Tomb, Graves	▲ 200	.200	.200
Roads, metalled according to importance	Lighthouse, Lightship, Buoy, lighted, unlighted, Anchorage	▲ 63-3	▲ 63-0	▲ 63-0
Roads, double carriageway according to importance	Mine, Wire on hills, Grass, Scrub	▲ 63-3	▲ 63-0	▲ 63-0
Unmetalled road, Cart-track, Pack-track with pass, Foot-path	Palm, palmys, other, Pandan, Conifer, Bamboo, Other trees	▲ 63-3	▲ 63-0	▲ 63-0
Streams with track in bed, unconfined, Canal	Areas cultivated, wooded, Surveyed tree	▲ 63-3	▲ 63-0	▲ 63-0
Dams: masonry or rock-filled, earthenwork, Wall	Boundary, international	▲ 63-3	▲ 63-0	▲ 63-0
River, dry with water channel, with sand & rocks, Tidal river	state demarcated, undemarcated	▲ 63-3	▲ 63-0	▲ 63-0
Submerged roads, Shoal, Sewage, Road	district, subdivision, taluk or taluk, forest	▲ 63-3	▲ 63-0	▲ 63-0
Wells: lined, unlined, Tube-well, Spring, Tanks, perennial, dry	Boundary pillars: surveyed, unlocated	▲ 63-3	▲ 63-0	▲ 63-0
Embankments: road or rail, tank, Broken ground	Height, triangulated, station point, spot heights	▲ 63-3	▲ 63-0	▲ 63-0
Railways, broad gauge: double, single with station, under constr.	Bench-mark: geodetic, tertiary, canal	▲ 63-3	▲ 63-0	▲ 63-0
Railways, other gauge: double, single with station, do.	Post office, Telegraph office, Overhead tank	▲ 63-3	▲ 63-0	▲ 63-0
Mineral imp or tramway: 9ft. Cutting with tunnel	Rail house or inspection bungalow, Great house, Police station	▲ 63-3	▲ 63-0	▲ 63-0
Contours with sub-features: Rocky slopes, Cliffs	Camping ground, Forest: reserved, protected	▲ 63-3	▲ 63-0	▲ 63-0
Sand features (1/8th, 2/8th, 3/8th, 4/8th, 5/8th, 6/8th, 7/8th, 8/8th)	Spaced names: administrative, locality or label	▲ 63-3	▲ 63-0	▲ 63-0
Towns or Villages: inhabited, deserted, Fort	Hospital, Dispensary, Veterinary, Hospital / Dispensary	▲ 63-3	▲ 63-0	▲ 63-0
Huts: permanent, temporary, Tower, Anticline	Aerodrome, reserved, Tourist site	▲ 63-3	▲ 63-0	▲ 63-0
	Power line: with pylons surveyed, with poles unsurveyed	▲ 63-3	▲ 63-0	▲ 63-0

**POTENTIAL AREA OF SAND AT SUBARNAREKHA RIVER,
DISTRICT - SARAIKELA - KHARSAWAN,
OSM TOPOSHEET NO. F4511**



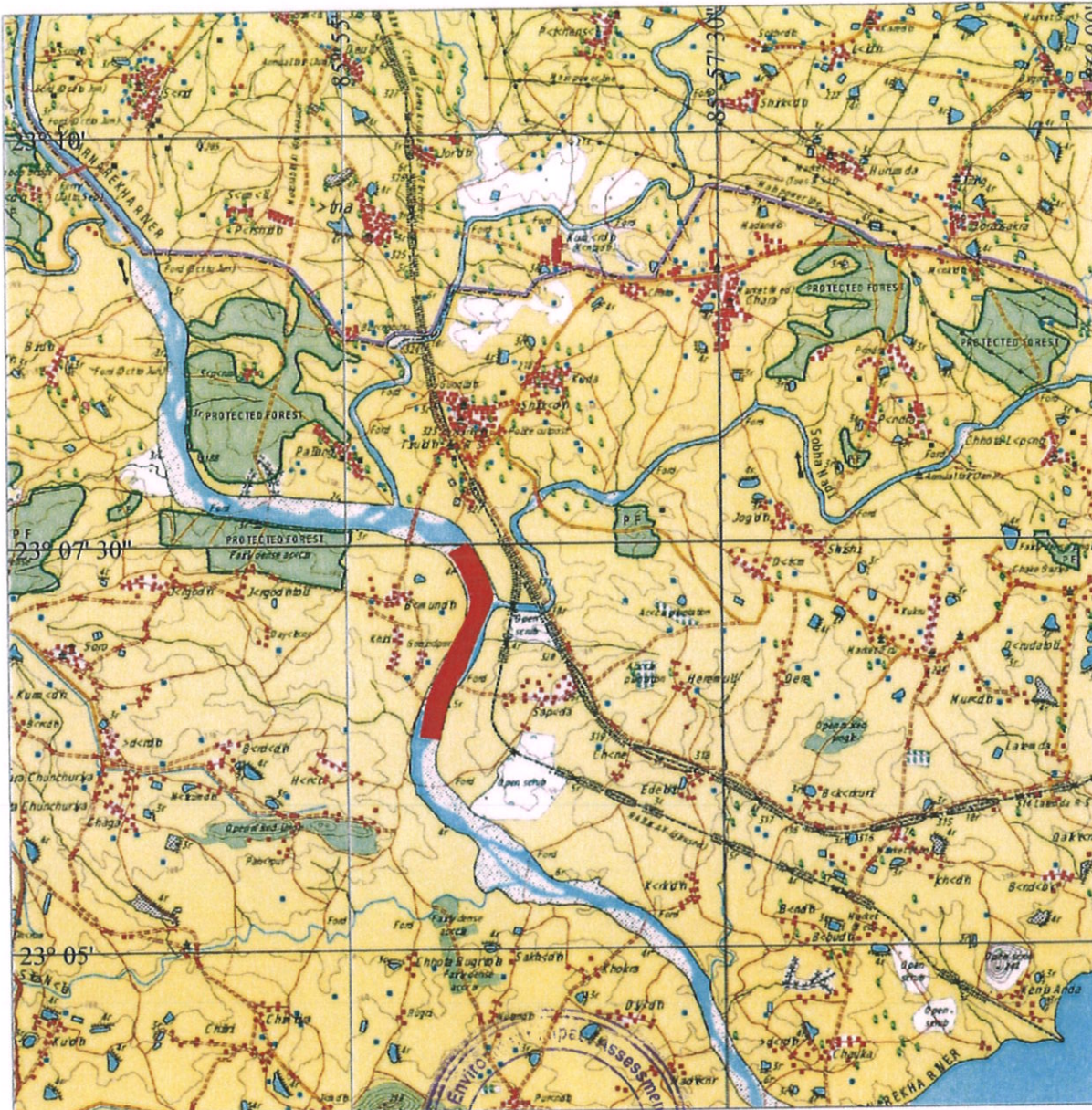
INDEX

- PROPOSED POTENTIAL AREA
- SR-1 AREA - 12.91 HA

SCALE - 1:1500

Express highway with toll, with bridge, with drainage	Temples, Ghats, Church, Mosque, Jagin, Tomb, Graves	▲ 200	▲ 200	▲ 200
Roads, metalled, according to importance	Lighthouses, Lightship, Buoy, Lighted, Unlighted, Anchorage	▲ 200	▲ 200	▲ 200
Roads, double cartage way, according to importance	Mine, Vine or bella, Grass, Scrub	▲ 200	▲ 200	▲ 200
Unmetalled road, Cart track, Pack-track with pass, Foot path	Palms, palmire, other, Piantin, Conifer, Bamboo, Other trees	▲ 200	▲ 200	▲ 200
Streams, with track in bed, unconfined, Canal	Areas, cultivated, wooded, Surveyed, tree	▲ 200	▲ 200	▲ 200
Dams, masonry or rock-filled, earthenwork, Weir	Boundary, international	▲ 200	▲ 200	▲ 200
River, dry with water channel, with sand & rocks, Tidal river	state demarcated, undemarcated	▲ 200	▲ 200	▲ 200
Submerged rocks, Rhoe, Swamp, Road	casted, subdivision, fence or silk, forest	▲ 200	▲ 200	▲ 200
Wells, lined, unlined, Tube-well, Spring, Tanks, perennial, dry	Boundary, others, surveyed, unboated	▲ 200	▲ 200	▲ 200
Embankments, road or rail, bank, Broken ground	heights, triangulated, station point, spot heights	▲ 200	▲ 200	▲ 200
Railways, broad gauge, double, single with station, under constn.	Bench-mark, geodetic, taffery, canal	▲ 200	▲ 200	▲ 200
Railways, other gauge, double, single with distance stone, do.	Post office, Telegraph office, Overhead tank	▲ 200	▲ 200	▲ 200
Mineral line or tramway, Kin, Cutting with tunnel	Rail house or inspection bench, bar, Great house, Power station	▲ 200	▲ 200	▲ 200
Contours with sub-features, Rocky slopes, Cliffs	Gaming ground, Forest, reserved, protected	▲ 200	▲ 200	▲ 200
Sand features (1) Bar, (2) Sand, (inspiration), (3) (inspiration)	Spaced names, administrative, locality or tribal	▲ 200	▲ 200	▲ 200
Towns or Villages, inhabited, deserted, Fort	Hospital, Dispensary, Veterinary, Hosital / Dispensary	▲ 200	▲ 200	▲ 200
Hule, permanent, temporary, Tower, Ark, house	Aerodrome, heliport, Tourist site	▲ 200	▲ 200	▲ 200
	Power line, with pylons surveyed, with poles unurveyed	▲ 200	▲ 200	▲ 200

**POTENTIAL AREA OF SAND AT SUBARNAREKHA RIVER,
DISTRICT - SARAIKELA - KHARSAWAN,
OSM TOPOSHEET NO. F45B16**



INDEX

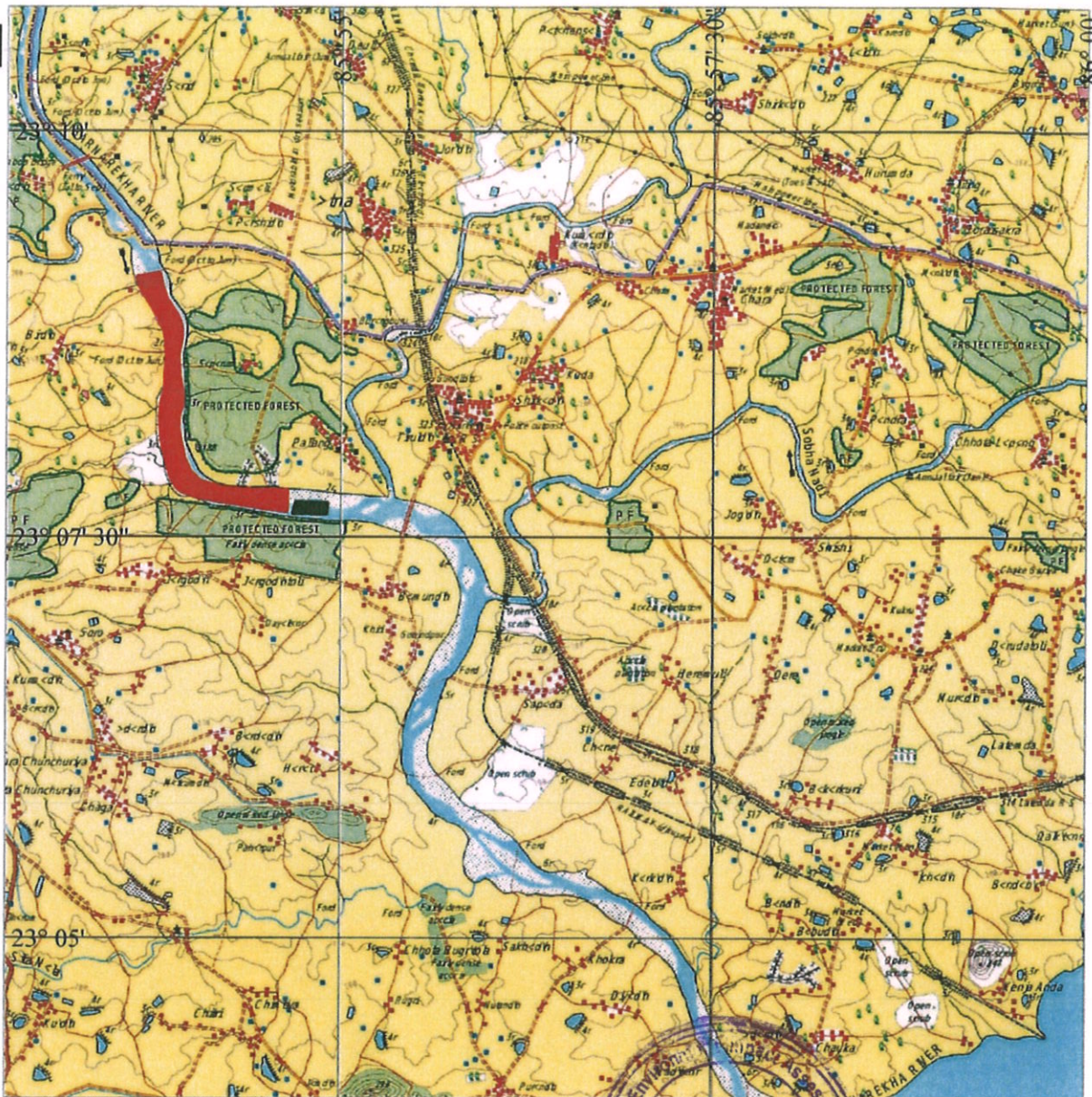
- PROPOSED POTENTIAL AREA
- SR-2 AREA - 48.90 HA



SCALE - 1:1500

Express highway with toll, with bridge, with distance stone	Temple, Ghnan, Church, Mosque, Jagan, Tomo, Graves
Roads, metalled according to importance	Lighthouse, Lightship, Buoy, lighted, unlighted, Anchorage
Roads, double carriageway according to importance	Mine, Mine on table, Grass, Scrub
Unmetalled road, Cart-track, Pack-track with pass, Foot-path	Farms, palms, other, Pansin, Conifer, Bamboo, Other trees
Streams, with track in bed, unconfined, Canal	Areas, cultivated, wooded, Surveyed tree
Dams, masonry or rock-filled, earthenwork, Weir	Boundary, international
Submerged rocks, Shoal, Swamp, Raft	state demarcated, undemarcated
Wells, lined, unlined, Tube-well, Spring, Tanks, perennial, dry	district, subdivision, taluk or tehsil, forest
Embankments, road or rail, tank, Broken ground	Boundary pillars, surveyed, unlocated
Railways, broad gauge, double, single with station, under constn.	insights, triangulated, station, point, approximates
Railways, other gauges, double, single with distance stone, do.	Benchmark, geodetic, tertiary, canal
Mineral line or tramway, skin, Cutting with tunnel	Post office, Telegraph office, Overhead tank
Contours with sub-features, Rocky slopes, Cliffs	Rail house or inspection bungalow, Guard house, Police station
Sand features (1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12) (13) (14) (15) (16) (17) (18) (19) (20)	Gravelly ground, Forest, reserved, protected
Towns or Villages, inhabited, deserted, Fort	Spaced names, administrative, locality or tribal
Hills, permanent, temporary, Tower, Antenna	Hospital, Dispensary, Veterinary Hospital / Dispensary
	Aerodrome, isolated, Tourist site
	Power line, with pylons surveyed, with poles unsurveyed

**POTENTIAL AREA OF SAND AT SUBARNAREKHA RIVER,
DISTRICT - SARAIKELA - KHARSAWAN,
OSM TOPOSHEET NO. F45B16**



INDEX

- PROPOSED POTENTIAL AREA
- EXISTING SAND GHAT
- SR-3
- AREA - 95.20 HA



Express highway with toll, with bridge, with distance stone		Large Green Church, Mosque, school, temple, graves	
Roads, metalled according to importance		Light house, lighthouse, buoy, groyne, wharfed, Anchorage	
Roads, double carriage way according to importance		Nice, Windmill, Grate, Turb	
Unmetalled road, Cart-track, Puck-back with pass, Foot path		Palms, palms, citrus, Plantain, Coconut, Bamboo, Other trees	
Streams, with track in bed, unconfined, Canal		Areas: cultivated, wooded, Surveyed tree	
Dams: masonry or rock-filled, earthwork, Weir		Boundary, international	
River, dry with water channel, with sand & rocks, Tidal river		state demarcated, undemarcated	
Submerged rocks, Shoal, Swamp, Reeds		district, subdivision, taluk or taluk, forest	
Wells: lined, unlined, Tube-well, Spring, Tank, perisat, dry		Boundary officers: surveyed, uncolated	
Embankments: road or rail, tank, Broken ground		Height, triangulated, station, point, approximate	
Railways, broad gauge, double, single with station, under constn		Bench-mark: geodetic, tertiary, canal	
Railways, other gauge, double, single with distance stone, do.		Post office, Telegraph office, Overhead tank	
Mineral line or tramway, Kin, Cutting with tunnel		Rail house or inspection bungalow, Guard house, Police station	
Contours with sub-fatures, Rocky slopes, Cliffs		Camping ground, Forest, reserved, protected	
Sand features: (1)flat, (2)and (inspersion), (3)duresetting		Spaced names: administrative, locality or tribal	
Towns or Villages: inhabited, deserted, Fort		Hospital, Dispensary, Veterinary, Hospital / Dispensary	
Hubs: permanent, temporary, Tower, Antiquities		Aerodrome, heliport, Tourist site	
		Power line, with cables surveyed, with poles unsurveyed	

ANNEXURE-13

COMPOSITE MAP OF TOPOSHEET MAP OF SURVEY OF INDIA



ANNEXURE-14

SATELLITE MAP OF PRE-
MONSOON AND POST-
MONSOON MAP

&



ZONE WISE

ANNEXURE-15

REPLENISHMENT STUDY OF PRE-MONSOON AND POST MONSOON DATA



KHARKAI RIVER OF SARAIKELA-KHARSAWAN DISTRICT											
PRE MONSOON					POST MONSOON						
S.NO	UIN SAND BAR	AMSL	AREA IN SQM	AREA IN HA.	UIN SAND BAR	AMSL	AREA IN SQM	AREA IN HA.	THICKNESS OF SAND IN MTR	VOLUME IN CUM	VOL IN M CUM
1	SRK_KR_PRE_01	208.61	375056	37.51	SRK_KR_POS_01	208.80	375057	37.51	0.19	71261	0.07
2	SRK_KR_PRE_02	204.27	261832	26.18	SRK_KR_POS_02	204.88	261834	26.18	0.41	107352	0.11
3	SRK_KR_PRE_03	203.01	435782	43.58	SRK_KR_POS_03	203.21	435786	43.58	0.20	87157	0.09
4	SRK_KR_PRE_04	184.04	110793	11.08	SRK_KR_POS_04	184.41	110795	11.08	0.37	40994	0.04
5	SRK_KR_PRE_05	157.10	169849	16.98	SRK_KR_POS_05	157.73	169852	16.99	0.63	107007	0.11
6	SRK_KR_PRE_06	155.72	185433	18.54	SRK_KR_POS_06	156.35	185437	18.54	0.63	116825	0.12
7	SRK_KR_PRE_07	143.53	247554	24.76	SRK_KR_POS_07	143.67	247558	24.76	0.14	34658	0.03
8	SRK_KR_PRE_08	140.20	89693	8.97	SRK_KR_POS_08	140.48	89694	8.97	0.28	25114	0.03
9	SRK_KR_PRE_09	142.14	40618	4.06	SRK_KR_POS_09	142.85	40620	4.06	0.71	28840	0.03
10	SRK_KR_PRE_10	150.83	75864	7.59	SRK_KR_POS_10	151.74	75867	7.59	0.91	69039	0.07
11	SRK_KR_PRE_11	134.47	158017	15.80	SRK_KR_POS_11	135.01	158018	15.80	0.54	85330	0.09
			2150491	215.05			2150518	215.05		773578	0.774
SUBARNAREKHA RIVER OF SARAIKELA-KHARSAWAN DISTRICT											
PRE MONSOON					POST MONSOON						
S.NO	UIN SAND BAR	AMSL	AREA IN SQM	AREA IN HA.	UIN SAND BAR	AMSL	AREA IN SQM	AREA IN HA.	THICKNESS OF SAND IN MTR	VOLUME IN CUM	VOL IN M CUM
1	SRK_SR_PRE_01	125.37	159271	15.93	SRK_SR_POS_01	125.49	159275	15.93	0.12	19113	0.02
2	SRK_SR_PRE_02	128.35	238709	23.87	SRK_SR_POS_02	128.61	238711	23.87	0.26	62065	0.06
3	SRK_SR_PRE_03	136.26	306176	30.62	SRK_SR_POS_03	136.39	306177	30.62	0.13	39803	0.04
4	SRK_SR_PRE_04	143.49	436849	43.68	SRK_SR_POS_04	143.77	436852	43.69	0.28	122319	0.12
5	SRK_SR_PRE_05	146.72	218407	21.84	SRK_SR_POS_05	147.01	218409	21.84	0.29	63339	0.06
6	SRK_SR_PRE_06	148.98	169241	16.92	SRK_SR_POS_06	149.28	169243	16.92	0.30	50773	0.05
7	SRK_SR_PRE_07	185.45	2461571	246.16	SRK_SR_POS_07	186.38	2461575	246.16	0.93	2289265	2.29
			3990224	399.02			3990242	399.02		2646676	2.65



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ESTIMATED POTENTIAL AREA OF SAND BAR OF PRE-MONSOON AND POST MONSOON PERIOD SAND REPLENISHMENT ESTIMATION SHEET AS PER GSDA												
PRE MONSOON DATA KHARKAI RIVER						POST MONSOON DATA KHARKAI RIVER						
UIN OF SAND BAR	AMSL	AVG AMSL	AREA IN SQM	RIVER WIDTH IN MTR	UIN OF SAND BAR	LATITUDE (N)	LONGITUDE (E)	AMSL	AVG AMSL	AREA IN SQM	SAND THICKNE SS IN MTR	VOLUME IN M CUM
SRK_KR_PRE_01	208.79	208.61	375056	174.43	SRK_KR_POS_01	22.485184	85.962668	208.98	208.8	375057	0.19	0.07
	208.22					22.485157	85.962323	208.41				
	207.93					22.485131	85.962034	208.12				
	207.76					22.485105	85.961784	207.95				
	207.85					22.485256	85.961897	208.03				
	208.33					22.485445	85.962075	208.52				
	209.42					22.485681	85.962283	209.60				
	208.23					22.485653	85.961984	208.41				
	207.30					22.485621	85.96173	207.48				
	207.76					22.485554	85.961447	207.95				
	208.46					22.485556	85.961198	208.64				
	207.85					22.485784	85.961272	208.03				
	208.15					22.486089	85.961419	208.33				
	209.59					22.486603	85.961612	209.78				
	209.66					22.486596	85.961166	209.85				
	209.55					22.486491	85.96079	209.74				
	209.37					22.486343	85.960166	209.56				
	208.35					22.486818	85.960274	208.54				
	208.13					22.487199	85.960363	208.31				
	207.86					22.487462	85.960423	208.05				
	207.84					22.487439	85.960158	208.03				
	207.88					22.487322	85.959867	208.07				
	208.32					22.487228	85.959355	208.50				
	207.78					22.487529	85.959381	207.97				
	207.59					22.48783	85.959463	207.77				
	207.56					22.488258	85.959525	207.75				
	206.08					22.488246	85.959155	206.26				
	207.95					22.488128	85.958844	208.14				
	210.24					22.488028	85.958461	210.43				
	209.14					22.488296	85.958498	209.33				
	209.07					22.488565	85.958569	209.26				
	209.81					22.488997	85.958653	210.00				
	209.60					22.48882	85.958259	209.79				
	209.23					22.488638	85.958002	209.42				
	208.94					22.488343	85.957577	209.96				
	207.98					22.488575	85.957443	209.13				
	208.81					22.48886	85.957374	208.16				
	207.48					22.489568	85.957213	209.00				
	207.48					22.488978	85.956668	211.67				
	207.03					22.488606	85.956166	211.22				
	209.13					22.489028	85.956061	209.32				
	209.30					22.489422	85.955923	209.49				
	207.37					22.489146	85.955614	207.55				
	209.14					22.488573	85.955312	209.33				
	207.18					22.488893	85.955029	207.37				
	208.76					22.48937	85.954585	208.95				
	208.19					22.488964	85.954414	208.38				
	210.54					22.48856	85.954241	210.73				



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202.43	22.527539	85.900525	202.64
202.23	22.527609	85.900237	202.44
202.49	22.527877	85.900492	202.69
202.55	22.52812	85.901017	202.75
203.32	22.528452	85.901517	203.52
202.58	22.528754	85.901269	202.78
201.85	22.529119	85.900871	202.05
202.58	22.52957	85.900614	202.79
201.90	22.529681	85.90105	202.10
201.94	22.529855	85.90154	202.15
204.15	22.530056	85.902016	204.35
202.17	22.530291	85.901824	202.37
200.59	22.530625	85.901507	200.79
201.14	22.530991	85.901329	201.34
200.45	22.531088	85.901674	200.65
202.88	22.531294	85.902258	203.09
204.68	22.531434	85.902757	204.88
202.71	22.531713	85.902373	202.91
202.97	22.532029	85.902117	203.18
203.66	22.532431	85.901937	203.86
203.78	22.53249	85.902382	203.99
203.55	22.532584	85.902814	203.75
203.58	22.532704	85.903446	203.78
203.72	22.533069	85.903006	203.93
204.50	22.533332	85.902858	204.71
205.42	22.533731	85.902782	205.62
204.31	22.533911	85.903288	204.51
204.44	22.534039	85.903836	204.65
204.58	22.534089	85.904393	204.79
202.66	22.534417	85.904111	202.86
201.15	22.534797	85.903849	201.35
200.58	22.535246	85.903756	200.78
200.21	22.535311	85.904252	200.41
202.43	22.535373	85.904714	202.63
204.66	22.535454	85.905293	204.87
203.60	22.535834	85.904959	203.81
202.47	22.536165	85.904634	202.67
202.80	22.536368	85.904517	203.00
202.73	22.53644	85.904702	202.94
203.80	22.536419	85.905128	203.01
206.42	22.536518	85.905619	204.46
204.20	22.536577	85.906036	205.62
203.60	22.536807	85.905862	204.41
202.60	22.537064	85.905552	202.87
202.72	22.537071	85.905529	202.85
201.76	22.537359	85.905209	202.54
201.96	22.537607	85.905619	201.97
202.77	22.53768	85.906067	202.17
202.94	22.537716	85.906539	202.97
199.04	22.537806	85.906858	203.15
201.39	22.538227	85.906604	199.24
202.54	22.538609	85.906261	201.59
200.44	22.538876	85.906172	202.74
200.26	22.539088	85.906809	200.65
201.98	22.539202	85.907162	200.46
200.62	22.539323	85.907844	202.18
201.77	22.53968	85.907538	200.82
	22.539981	85.90722	201.97

141.81	22.711413	86.048604	141.95
141.21	22.711515	86.048894	141.95
140.71	22.711603	86.049169	140.85
141.73	22.711763	86.048913	141.88
142.90	22.711195	86.048668	143.05
143.45	22.712052	86.048603	143.59
142.81	22.712098	86.048865	142.95
142.10	22.712222	86.049211	142.24
141.47	22.712307	86.049539	141.61
142.16	22.712394	86.049316	142.30
143.16	22.71256	86.049101	143.31
143.79	22.712743	86.048989	143.93
142.74	22.712865	86.049287	142.88
140.44	22.713015	86.049764	140.58
141.82	22.713122	86.049497	141.97
143.27	22.713262	86.049253	143.41
141.37	22.7134	86.049669	141.51
139.78	22.713545	86.050192	139.92
142.53	22.713756	86.049978	142.68
145.80	22.714081	86.049864	145.95
144.70	22.71413	86.050121	144.84
141.45	22.714149	86.050598	141.59
140.04	22.714174	86.050933	140.18
142.61	22.714397	86.050702	142.75
144.80	22.714569	86.050546	144.95
147.00	22.714783	86.050399	147.15
146.12	22.714848	86.050705	146.27
145.84	22.714875	86.051033	145.99
145.73	22.714849	86.051478	145.88
146.98	22.715076	86.051289	147.13
147.68	22.715318	86.051062	147.83
148.57	22.715512	86.05089	148.72
147.98	22.715629	86.051251	148.13
146.82	22.71566	86.051672	146.97
144.74	22.715713	86.051107	144.89
145.67	22.716013	86.051852	145.82
145.80	22.716218	86.051709	145.94
147.06	22.716558	86.051377	147.21
144.87	22.71661	86.05175	145.01
144.34	22.716699	86.05211	144.48
143.76	22.716684	86.052548	143.90
143.96	22.716876	86.052212	144.10
144.62	22.71709	86.051911	144.77
145.33	22.717243	86.051628	145.93
144.43	22.71741	86.051964	144.58
142.69	22.717478	86.052334	142.83
142.12	22.717582	86.052652	142.37
142.86	22.717647	86.052883	142.74
141.69	22.717853	86.052582	141.77
142.52	22.717953	86.052295	142.70
145.14	22.718122	86.051888	145.29
142.70	22.718297	86.052246	142.84
141.24	22.71842	86.052643	141.38
142.95	22.718625	86.053146	143.10
142.54	22.718808	86.052946	142.68
141.13	22.719008	86.052562	141.27



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146.36						22.719307	86.052028	146.51			
141.78						22.719405	86.052519	141.99			
144.37						22.719567	86.053333	144.52			
143.46						22.719711	86.052884	143.60			
143.71						22.719897	86.052477	143.85			
147.87						22.720042	86.052097	148.02			
144.63						22.720283	86.05249	144.78			
144.23						22.720439	86.052855	144.38			
143.67						22.720745	86.053407	143.81			
146.39						22.720978	86.052522	144.69			
149.50						22.721161	86.052538	146.53			
147.65						22.721396	86.052195	149.65			
145.94						22.721548	86.05265	147.79			
144.69						22.721759	86.053001	146.08			
144.37						22.72194	86.05352	144.84			
145.01						22.722053	86.053125	144.51			
145.03						22.722238	86.052742	145.15			
141.59						22.72238	86.052282	145.18			
142.91						22.722474	86.052719	141.74			
145.55						22.722657	86.053094	143.05			
144.47						22.722878	86.053551	145.70			
144.43						22.723047	86.053112	144.61			
145.24						22.723178	86.052722	144.57			
144.59						22.72337	86.052409	145.39			
144.17						22.723627	86.052748	144.74			
143.89						22.723806	86.053239	144.31			
142.68						22.723986	86.053701	144.03			
143.02						22.724244	86.053384	142.83			
143.64						22.724402	86.052942	143.17			
141.72						22.724662	86.052583	143.78			
142.07						22.724821	86.053194	141.86			
143.06						22.724823	86.053752	142.22			
141.01						22.724765	86.054219	143.21			
141.34						22.725147	86.053953	141.92			
139.15						22.725493	86.053734	141.15			
140.88						22.725842	86.0536	141.48			
142.51						22.725647	86.054264	139.29			
140.10						22.725475	86.054556	141.02			
342.24						22.725342	86.05482	142.65			
140.77						22.725661	86.054881	140.24			
143.43						22.726634	86.05489	142.39			
142.07						22.726092	86.05518	140.91			
141.27						22.725776	86.05497	143.57			
141.90						22.726342	86.055543	142.21			
142.80						22.727031	86.055542	142.66			
140.91						22.726784	86.05863	141.41			
141.28						22.726525	86.056311	142.04			
142.95						22.726418	86.05647	142.94			
142.50						22.726794	86.056578	141.05			
145.65						22.727391	86.056531	141.42			
146.54						22.72765	86.056529	143.09			
144.04						22.727348	86.057108	142.64			
144.82						22.727069	86.057451	145.80			
						22.727022	86.057627	146.68			
						22.727352	86.057585	144.18			
						22.727908	86.057064	144.96			



SRK_KR_PRE_08	145.83	139.91	140.2	89693	214.45	SRK_KR_POS_08	22.727187	86.057942	145.98	140.48	89694	0.28	0.03
	139.16						22.729502	86.062408	140.19				
	137.82						22.729666	86.062372	139.44				
	139.73						22.730012	86.062284	138.09				
	138.48						22.730252	86.062228	140.01				
	138.18						22.730121	86.062475	138.75				
	140.26						22.729998	86.062687	138.46				
	139.12						22.729811	86.063007	140.54				
	139.97						22.730111	86.062956	139.40				
	140.70						22.730413	86.062904	140.25				
	139.84						22.730414	86.062889	140.98				
	139.71						22.730414	86.063128	140.12				
	141.10						22.730277	86.063297	139.99				
	140.01						22.730005	86.063544	141.38				
	139.45						22.730424	86.063501	140.29				
	140.99						22.730689	86.063489	139.73				
	138.14						22.731059	86.063466	141.28				
	138.20						22.730846	86.063807	138.41				
	139.94						22.730735	86.063988	138.47				
	136.87						22.730544	86.064295	140.23				
	139.88						22.730847	86.064263	137.14				
	143.86						22.731137	86.064211	140.17				
	140.93						22.731502	86.064179	144.15				
	139.31						22.731349	86.064472	141.21				
	137.38						22.731223	86.064662	139.59				
	139.34						22.731012	86.064989	137.66				
	140.70						22.731461	86.064933	139.62				
	141.73						22.731757	86.064849	140.98				
	138.57						22.732107	86.064721	142.01				
	137.80						22.732085	86.065047	138.85				
	136.78						22.732072	86.065381	138.08				
	137.33						22.732334	86.065556	137.05				
	140.85						22.732521	86.065225	137.60				
	139.82						22.732758	86.064891	141.14				
	138.93						22.732908	86.065235	140.10				
	141.73						22.733017	86.065483	139.84				
	143.27						22.733159	86.065843	139.21				
	143.34						22.733292	86.065536	142.02				
	141.59						22.733288	86.065025	143.55				
	139.62						22.733281	86.064594	146.27				
	141.20						22.733608	86.064858	143.63				
	147.51						22.7338	86.065143	141.82				
	148.84						22.734176	86.065479	139.90				
	148.96						22.734084	86.064837	141.57				
	141.77						22.733969	86.064536	142.79				
	141.77						22.733896	86.064289	143.93				
	141.25						22.73412	86.064255	142.26				
	142.57						22.734372	86.06428	141.50				
	141.20						22.73475	86.064253	140.79				
	139.26						22.734485	86.063872	141.54				
	139.93						22.734296	86.065535	142.85				
	141.42						22.734568	86.063485	141.49				
							22.734924	86.063427	139.54				
							22.73477	86.063146	140.21				
							22.734511	86.062873	141.70				



152.44	22.759038	85.983401	153.36
151.84	22.759169	85.983436	152.75
151.78	22.759465	85.983484	152.70
151.64	22.759319	85.983536	152.56
151.38	22.759175	85.983627	152.30
151.33	22.759344	85.983685	152.25
151.31	22.759611	85.983773	152.23
150.99	22.759443	85.983888	151.90
150.72	22.759355	85.983976	151.63
150.66	22.759498	85.984079	151.57
150.54	22.759868	85.984267	151.45
150.12	22.759717	85.984395	151.03
149.81	22.759564	85.984625	150.72
149.18	22.759793	85.98467	150.08
149.73	22.760131	85.984786	150.63
148.44	22.759966	85.984898	148.62
148.44	22.759735	85.985055	149.34
148.98	22.759653	85.985143	149.88
147.46	22.759984	85.985262	148.35
149.49	22.760195	85.985329	150.39
152.28	22.76043	85.985394	153.20
150.17	22.760268	85.985598	151.08
148.69	22.760144	85.985762	149.59
148.21	22.759922	85.986006	149.10
148.86	22.760143	85.986113	149.76
150.60	22.760415	85.98624	151.51
151.51	22.760732	85.986411	152.42
150.42	22.760545	85.986493	151.33
149.57	22.76034	85.986621	150.48
149.26	22.760118	85.986694	150.16
149.35	22.760357	85.98687	150.25
148.96	22.760616	85.987039	149.86
148.30	22.760846	85.987215	149.19
148.42	22.76056	85.987336	149.32
148.98	22.760322	85.987441	149.88
149.57	22.760143	85.987514	150.47
148.72	22.760415	85.987688	149.62
148.43	22.760658	85.987922	149.32
148.55	22.760796	85.988087	149.45
148.96	22.76048	85.988169	149.86
148.92	22.760225	85.988224	150.03
149.17	22.760005	85.988271	150.07
148.90	22.760228	85.988569	149.80
149.86	22.760362	85.988853	150.77
147.10	22.760084	85.988934	147.99
146.87	22.75986	85.988934	147.75
147.45	22.759612	85.988956	148.32
145.93	22.759777	85.988969	147.94
146.66	22.759893	85.989248	146.81
147.06	22.760057	85.989598	149.36
147.77	22.759854	85.989535	148.35
147.31	22.759679	85.989456	148.32
150.03	22.759968	85.989721	149.20
149.60	22.759767	85.990167	150.94
148.76	22.759438	85.990088	150.50
149.58	22.759668	85.990291	150.48

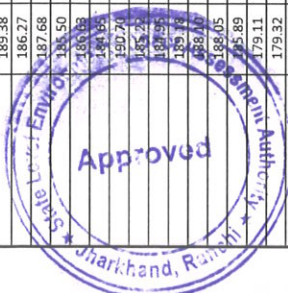


ESTIMATED POTENTIAL AREA OF SAND BAR OF PRE-MONSOON AND POST-MONSOON PERIOD												
SAND REPLENISHMENT ESTIMATION SHEET AS PER GSDA												
PRE MONSOON DATA					POST MONSOON DATA							
SUBARNAREKHA RIVER												
UIN OF SAND BAR	AMSL	AVG AMSL	AREA IN SQM	RIVER WIDTH IN MTR	UIN OF SAND BAR	LATITUDE (N)	LONGITUDE (E)	AMSL	AVG AMSL	AREA IN SQM	SAND THICKNESS IN MTR	VOLUME IN M CUM
SRK_SR_POS_01	126.58	125.37	159271	266.5	SRK_SR_POS_01	22.839697	86.159426	126.70	125.49	159275	0.12	0.02
	125.65					22.839414	86.159376	125.77				
	125.33					22.838983	86.159205	125.46				
	128.63					22.838471	86.158961	128.76				
	125.70					22.838751	86.159459	125.82				
	125.56					22.838998	86.159762	125.69				
	125.71					22.839078	86.159924	125.83				
	125.42					22.838757	86.159937	125.55				
	125.31					22.838528	86.15987	125.44				
	127.26					22.838	86.159546	127.39				
	130.35					22.837608	86.159367	130.48				
	130.18					22.837612	86.159384	130.31				
	125.55					22.838097	86.160194	125.67				
	126.70					22.838223	86.160437	126.82				
	127.51					22.838202	86.160651	127.64				
	125.99					22.837882	86.160507	126.12				
	125.02					22.83758	86.16031	125.14				
	124.66					22.837321	86.160089	124.79				
	124.86					22.836779	86.1599	124.99				
	124.43					22.837065	86.160087	124.55				
	126.25					22.837383	86.161567	126.38				
	124.07					22.836738	86.161358	124.20				
	124.76					22.836219	86.161133	124.88				
	126.49					22.835789	86.160643	126.62				
	125.36					22.835882	86.161184	125.49				
	123.83					22.836111	86.161695	124.64				
	123.83					22.836632	86.162178	124.02				
	125.43					22.836931	86.162455	125.55				
	123.83					22.836633	86.162577	124.00				
	123.83					22.836081	86.162551	124.04				
	125.65					22.835505	86.16252	126.75				
	125.11					22.8357	86.162696	125.24				
	124.48					22.836065	86.163193	124.60				
	127.94					22.836535	86.163793	124.07				
	124.20					22.835846	86.163888	124.33				
	125.89					22.835408	86.163755	126.01				
	126.65					22.83521	86.163737	126.78				
	124.79					22.83544	86.164213	124.92				
	124.10					22.835707	86.164603	124.22				
	124.30					22.83562	86.164967	124.42				
	124.10					22.835644	86.165014	124.22				
	124.81					22.835127	86.164913	124.93				
	126.47					22.834755	86.16481	126.60				
	124.97					22.834904	86.165226	125.09				
	123.99					22.835167	86.165711	124.12				
	125.18					22.835687	86.166491	125.30				
	124.30					22.835282	86.166356	124.43				





129.53						22.836148	86.134897	129.79			
126.84						22.835572	86.134757	127.09			
126.95						22.835233	86.134766	127.20			
126.90						22.835798	86.13513	127.15			
128.99						22.835994	86.135591	129.25			
137.34	306176	229.31	SRK_SR_POS_03			22.898103	86.057695	137.48	306177	0.13	0.04
134.87						22.898493	86.057985	135.00			
136.71						22.899298	86.058449	136.85			
140.25						22.899587	86.058877	140.40			
134.87						22.899163	86.059052	135.00			
134.87						22.898727	86.059286	135.00			
137.54						22.897971	86.05985	137.68			
134.87						22.898412	86.059982	135.00			
134.87						22.898605	86.060219	135.00			
137.77						22.899422	86.060635	137.91			
134.87						22.898931	86.060759	135.00			
134.87						22.898548	86.061213	135.00			
137.05						22.897753	86.061607	137.19			
134.97						22.898302	86.061699	135.11			
134.87						22.898761	86.061949	135.00			
135.71						22.899234	86.062224	135.85			
134.87						22.898684	86.062486	135.00			
134.91						22.898317	86.062584	135.04			
137.21						22.897567	86.062731	137.35			
135.61						22.898158	86.063143	135.75			
135.25						22.898645	86.063356	135.39			
136.19						22.899111	86.06368	136.32			
134.90						22.898345	86.064286	135.04			
136.56						22.897774	86.064556	136.70			
137.01						22.897532	86.064803	137.15			
135.62						22.898019	86.065243	135.75			
136.54						22.898566	86.065537	136.68			
135.36						22.898743	86.065865	137.97			
137.84						22.898167	86.066253	135.50			
137.39						22.897614	86.066721	137.53			
135.80						22.898283	86.067198	135.14			
137.27						22.898754	86.067639	137.86			
137.00						22.897696	86.068163	137.14			
135.00						22.898358	86.068539	135.13			
139.00						22.898574	86.069067	139.43			
135.83						22.898218	86.069501	135.83			
140.87						22.897669	86.069746	140.96			
135.87						22.898427	86.070154	135.39			
136.00						22.898892	86.07047	136.55			
135.13						22.898164	86.070998	137.27			
135.46						22.897744	86.071386	141.60			
135.63						22.898471	86.072081	135.66			
138.08						22.898669	86.072694	138.22			
135.52						22.898105	86.072941	135.66			
136.70						22.897751	86.073093	136.84			
135.48						22.897862	86.073459	135.61			
137.25						22.898387	86.074204	137.39			
135.50						22.897758	86.074011	135.63			
138.13						22.897102	86.073769	138.27			
135.28						22.89734	86.074396	135.42			
135.46						22.897623	86.075141	135.59			



188.19	23.144241	85.898614	189.13
187.22	23.143959	85.898046	188.17
185.37	23.143603	85.897503	186.31
187.44	23.143298	85.897144	188.39
185.19	23.142898	85.897643	186.12
187.49	23.142593	85.898182	188.44
189.76	23.142248	85.898712	190.72
188.82	23.141991	85.89797	189.76
185.17	23.141692	85.897478	186.10
187.87	23.141371	85.897002	188.82
187.12	23.141217	85.89755	188.06
193.50	23.140819	85.898265	194.47
192.63	23.140244	85.899058	193.50
190.35	23.139917	85.898331	191.30
188.42	23.139552	85.897563	189.37
190.48	23.139122	85.896443	191.44
187.91	23.138513	85.897144	188.85
187.37	23.138125	85.897871	188.31
189.41	23.137737	85.898801	190.36
184.68	23.137388	85.897646	185.61
188.39	23.137007	85.896934	189.34
190.49	23.136656	85.896254	191.45
188.65	23.136294	85.897183	189.59
188.47	23.135999	85.89795	189.41
187.39	23.135756	85.898943	188.34
188.06	23.135239	85.897832	189.00
190.25	23.134461	85.896996	191.21
191.82	23.134037	85.896817	192.78
187.59	23.133994	85.897885	188.54
186.55	23.133748	85.898889	187.49
189.38	23.13362	85.899617	190.33
186.27	23.132897	85.898616	187.20
187.68	23.132119	85.897949	188.62
185.50	23.131627	85.897437	186.44
189.83	23.131428	85.898526	187.57
189.85	23.131434	85.899547	185.58
190.74	23.131798	85.900775	191.66
185.24	23.131188	85.900476	186.15
187.95	23.130124	85.899802	185.88
189.73	23.12945	85.899378	190.13
188.07	23.129635	85.900508	189.05
188.05	23.130096	85.901707	189.00
185.89	23.130412	85.90263	186.82
179.11	23.129658	85.902529	180.01
179.32	23.129046	85.902454	180.22
185.48	23.128675	85.902309	186.41
182.04	23.129367	85.903116	182.96
187.43	23.129878	85.903798	188.37
188.53	23.130099	85.904315	189.48
185.69	23.129646	85.904665	186.62
182.33	23.129178	85.90495	183.25
187.65	23.128353	85.905197	188.60
181.50	23.128829	85.905741	182.41
180.59	23.129487	85.906211	181.50
187.06	23.130014	85.90665	188.00
181.69	23.129329	85.907029	182.60



185.91	23.128574	85.907503	186.85						
189.77	23.127889	85.907844	190.73						
186.54	23.128768	85.908769	187.48						
187.11	23.129474	85.909461	188.05						
190.38	23.129878	85.909987	191.34						
183.79	23.12899	85.910617	184.72						
183.10	23.128275	85.911023	184.02						
187.93	23.127322	85.911463	188.87						
185.62	23.127985	85.9121	186.55						
183.27	23.12884	85.912933	184.19						
188.33	23.129659	85.913597	189.28						
182.07	23.128674	85.913978	182.99						
181.09	23.127951	85.914343	182.00						
187.24	23.127012	85.914686	188.18						
183.66	23.12785	85.915396	184.59						
183.60	23.12853	85.915941	184.52						
185.24	23.129311	85.916539	186.17						
184.41	23.128326	85.916945	185.34						
184.87	23.127509	85.917316	185.79						
186.97	23.126909	85.917588	187.91						
180.68	23.127587	85.918114	181.59						
185.55	23.128344	85.918735	186.49						
186.99	23.129025	85.91973	187.93						
185.20	23.128256	85.920362	186.13						
186.50	23.127433	85.920715	187.44						
181.41	23.126507	85.921216	182.32						
181.68	23.127095	85.921838	182.59						
183.98	23.127958	85.922584	184.90						
183.77	23.128586	85.923414	184.70						
180.30	23.127411	85.923861	181.21						
183.35	23.125884	85.923918	184.27						
184.30	23.126846	85.924887	185.22						
184.51	23.127711	85.926219	185.43						
182.90	23.126846	85.926268	183.82						
182.25	23.125634	85.926141	183.16						
183.19	23.125142	85.926108	184.11						
183.40	23.125705	85.927195	179.00						
181.34	23.126057	85.92804	182.25						
184.17	23.126356	85.929082	185.05						
181.09	23.125114	85.928713	182.00						
189.04	23.124161	85.928314	189.99						
188.10	23.123688	85.928192	189.05						
182.71	23.123665	85.929089	189.16						
186.57	23.123661	85.93023	190.49						
186.07	23.123485	85.931329	187.00						
189.36	23.122766	85.930526	185.31						
182.91	23.122034	85.929979	183.83						
184.19	23.121384	85.929601	185.12						
175.55	23.121142	85.93078	176.44						
178.32	23.12109	85.931848	179.22						
183.62	23.120671	85.932594	184.54						
179.48	23.12003	85.931746	180.38						
183.29	23.119584	85.931101	184.21						
186.15	23.119043	85.930152	187.08						
184.27	23.118629	85.930953	185.20						
185.71	23.118171	85.931672	186.64						



ANNEXURE-16

TEST REPORT OF SAND FROM NABL ACCREDITED AGENCY

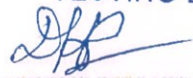




A D POWER PVT.LTD. TESTING LAB
QR.NO. CD/488, SECTOR 2, DHURWA, RANCHI-834004, JHARKHAND
SPECIFIC GRAVITY (IS:2386,Part - 3)
SARAIKELA KHARSAWAN

UIN	LEASE DETAILS	AREA (Ha.)	SAMPLE NO.	GEO-COORDINATE	SPECIFIC GRAVITY	BULK DENSITY
KR1	Jadudihi & Kumbaram, Kharkai River	18.6	1	22°29'38.24"N 85°56'40.42"E	2.619	1.300
			2	22°29'33.54"N 85°56'48.26"E	2.623	1.298
			3	22°29'26.97"N 85°56'54.26"E	2.611	1.302
KR2	Sarjamdihi, Kharkai River	3.68	4	22°30'38.83"N 85°54'55.31"E	2.631	1.294
KR3	Majhigan & Balidih, Kharkai River	10	5	22°32'20.47"N 85°54'24.56"E	2.622	1.303
			6	22°32'11.54"N 85°54'20.98"E	2.606	1.296
KR4	Dighi & Lakshmpur, Kharkai River	8.1	7	22°41'53.56"N 85°58'32.43"E	2.632	1.280
			8	22°41'49.49"N 85°58'27.69"E	2.612	1.282
KR5	Nuadih, Kharkai River	5.7	9	22°41'32.43"N 85°59'27.83"E	2.619	1.284
			10	22°41'34.69"N 85°59'32.74"E	2.625	1.286
KR6	Jambura, Kharkai River	2.08	11	22°46'52.70"N 86° 2'38.80"E	2.629	1.299
SR1	Balidih, Subarnarekha River	12.91	12	22°55'37.48"N 86° 0'53.49"E	2.601	1.290
			13	22°55'30.36"N 86° 0'48.05"E	2.635	1.297
			14	22°55'26.21"N 86° 0'47.89"E	2.629	1.276
SR2	Bamundih, Gobindpur & Sapada, Subarnarekha River	48.9	15	23° 7'18.50"N 85°55'49.10"E	2.620	1.279
			16	23° 7'13.12"N 85°55'51.57"E	2.637	1.294
			17	23° 7'3.39"N 85°55'52.68"E	2.606	1.282
			18	23° 6'54.81"N 85°55'46.98"E	2.632	1.299
			19	23° 6'42.88"N 85°55'42.10"E	2.622	1.298
SR3	Saparam, Soro & Birdih, Subarnarekha River	95.2	20	23° 7'42.26"N 85°55'2.70"E	2.619	1.301
			21	23° 7'44.60"N 85°54'42.32"E	2.608	1.297
			22	23° 7'44.38"N 85°54'17.09"E	2.627	1.301
			23	23° 7'58.65"N 85°53'53.97"E	2.635	1.287
			24	23° 8'17.00"N 85°53'50.38"E	2.640	1.287
			25	23° 8'44.84"N 85°53'52.23"E	2.618	1.289
			26	23° 9'5.58"N 85°53'42.70"E	2.614	1.303
			27	23° 7'45.49"N 85°54'28.28"E	2.607	1.299
			28	23° 7'52.35"N 85°54'3.60"E	2.625	1.297
			29	23° 8'9.27"N 85°53'49.91"E	2.610	1.296

For AD Powers Pvt. Ltd.
TESTING LAB


AUTHORIZED SIGNATORY
Authorized Signatory





A D POWER PVT.LTD. TESTING LAB
QR.NO. CD/488, SECTOR 2, DHURWA, RANCHI-834004, JHARKHAND

SPECIFIC GRAVITY (IS:2386,Part - 3)

SARAIKELA KHARSAWAN

UIN	LEASE DETAILS	AREA (Ha.)	SAMPLE NO.	GEO-COORDINATE	SPECIFIC GRAVITY
KR1	Jadudihi & Kumbram, Kharkai River	18.6	1	22°29'38.24"N 85°56'40.42"E	2.619
			2	22°29'33.54"N 85°56'48.26"E	2.623
			3	22°29'26.97"N 85°56'54.26"E	2.611
KR2	Sarjamdihi, Kharkai River	3.68	4	22°30'38.83"N 85°54'55.31"E	2.631
KR3	Majhigan & Balidihi, Kharkai River	10	5	22°32'20.47"N 85°54'24.56"E	2.622
			6	22°32'11.54"N 85°54'20.98"E	2.606
KR4	Dighi & Lakshmipur, Kharkai River	8.1	7	22°41'53.56"N 85°58'32.43"E	2.632
			8	22°41'49.49"N 85°58'27.69"E	2.612
KR5	Nuadih, Kharkai River	5.7	9	22°41'32.43"N 85°59'27.83"E	2.619
			10	22°41'34.69"N 85°59'32.74"E	2.625
KR6	Jambura, Kharkai River	2.08	11	22°46'52.70"N 86° 2'38.80"E	2.629
SR1	Balidih, Subarnarekha River	12.91	12	22°55'37.48"N 86° 0'53.49"E	2.601
			13	22°55'30.36"N 86° 0'48.05"E	2.635
			14	22°55'26.21"N 86° 0'47.89"E	2.629
SR2	Bamundi, Gobindpur & Sapada, Subarnarekha River	48.9	15	23° 7'18.50"N 85°55'49.10"E	2.620
			16	23° 7'13.12"N 85°55'51.57"E	2.637
			17	23° 7'3.39"N 85°55'52.68"E	2.606
			18	23° 6'54.81"N 85°55'46.98"E	2.632
			19	23° 6'42.88"N 85°55'42.10"E	2.622
SR3	Saparam, Soro & Birdih, Subarnarekha River	95.2	20	23° 7'42.26"N 85°55'2.70"E	2.619
			21	23° 7'44.60"N 85°54'42.32"E	2.608
			22	23° 7'44.38"N 85°54'17.09"E	2.627
			23	23° 7'58.65"N 85°53'53.97"E	2.635
			24	23° 8'17.00"N 85°53'50.38"E	2.640
			25	23° 8'44.84"N 85°53'52.23"E	2.618
			26	23° 9'5.58"N 85°53'42.70"E	2.614
			27	23° 7'45.49"N 85°54'28.28"E	2.607
			28	23° 7'52.35"N 85°54'3.60"E	2.625
			29	23° 8'9.27"N 85°53'49.91"E	2.610



For AD Powers Pvt. Ltd.
TESTING LAB

AUTHORIZED SIGNATORY

DHP
Authorised Signatory



AD Powers Private Limited

PVT.LTD. TESTING LAB

QR. NO. CD/488, SECTOR2, DHURWA, RANCHI-834004, JHARKHAND

Email.: - adpower350@gmail.com, Mobile: -7903166826

NABL Accredited Laboratory

TEST REPORT

Reporting Date: -30.1.2023

Report No.ADP/SK/23-24/TR-NO-1/1

Description of Sample: - 03 Bag Sand sample submitted to us for the Specific Gravity tests.

Source: - KHARKI RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

UIN	LEASE DETAILS	AREA (Ha.)	SAMPLE NO.	GEO-COORDINATE	SPECIFIC GRAVITY
KR1	Jadudihi & Kumbram, Kharkai River	18.6	1	22°29'38.24"N 85°56'40.42"E	2.619
			2	22°29'33.54"N 85°56'48.26"E	2.623
			3	22°29'26.97"N 85°56'54.26"E	2.611



AUTHORIZED SIGNATORY

For AD Powers Pvt. Ltd.
TESTING LAB

Authorised Signatory



AD Powers Private Limited

PVT.LTD. TESTING LAB

QR. NO. CD/488, SECTOR2, DHURWA, RANCHI-834004, JHARKHAND

Email.: - adpower350@gmail.com, Mobile: -7903166826

NABL Accredited Laboratory

TEST REPORT

Reporting Date: -30.1.2023

Report No.ADP/SK/23-24/TR-NO-1/2

Description of Sample: - 01 Bag Sand sample submitted to us for the Specific Gravity tests.

Source: - KHARKI RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

UIN	LEASE DETAILS	AREA (Ha.)	SAMPLE NO.	GEO-COORDINATE	SPECIFIC GRAVITY
KR2	Sarjamdihi,Kharkai River	3.68	1	22°30'38.83"N 85°54'55.31"E	2.631



AUTHORIZED SIGNATORY

For AD Powers Pvt. Ltd.
TESTING LAB



Authorised Signatory



AD Powers Private Limited

PVT.LTD. TESTING LAB

QR. NO. CD/488, SECTOR2, DHURWA, RANCHI-834004, JHARKHAND

Email.: - adpower350@gmail.com, Mobile: -7903166826

NABL Accredited Laboratory

TEST REPORT

Reporting Date: -30.1.2023

Report No.ADP/SK/23-24/TR-NO-1/3

Description of Sample: - 02 Bag Sand sample submitted to us for the Specific Gravity tests.

Source: - KHARKI RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

UIN	LEASE DETAILS	AREA (Ha.)	SAMPLE NO.	GEO-COORDINATE	SPECIFIC GRAVITY
KR3	Majhigan & Balidihi, Kharkai River	10	1	22°32'20.47"N 85°54'24.56"E	2.622
			2	22°32'11.54"N 85°54'20.98"E	2.606



AUTHORIZED SIGNATORY

For AD Powers Pvt. Ltd.
TESTING LAB



Signature

Authorised Signatory



AD Powers Private Limited

PVT.LTD. TESTING LAB

QR. NO. CD/488, SECTOR2, DHURWA, RANCHI-834004, JHARKHAND

Email.: - adpower350@gmail.com, Mobile: -7903166826

NABL Accredited Laboratory

TEST REPORT

Reporting Date: -30.1.2023

Report No.ADP/SK/23-24/TR-NO-1/4

Description of Sample: - 02 Bag Sand sample submitted to us for the Specific Gravity tests.

Source: - KHARKI RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

UIN	LEASE DETAILS	AREA (Ha.)	SAMPLE NO.	GEO-COORDINATE	SPECIFIC GRAVITY
KR4	Dighi & Lakshmipur, Kharkai River	8.1	1	22°41'53.56"N 85°58'32.43"E	2.632
			2	22°41'49.49"N 85°58'27.69"E	2.612



AUTHORIZED SIGNATORY

For AD Powers Pvt. Ltd.
TESTING LAB

Authorised Signatory



AD Powers Private Limited

PVT.LTD. TESTING LAB

QR. NO. CD/488, SECTOR2, DHURWA, RANCHI-834004, JHARKHAND

Email.: - adpower350@gmail.com, Mobile: -7903166826

NABL Accredited Laboratory

TEST REPORT

Reporting Date: -30.1.2023

Report No.ADP/SK/23-24/TR-NO-1/5

Description of Sample: - 02 Bag Sand sample submitted to us for the Specific Gravity tests.

Source: - KHARKI RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

UIN	LEASE DETAILS	AREA (Ha.)	SAMPLE NO.	GEO-COORDINATE	SPECIFIC GRAVITY
KR5	Nuadih,Kharkai River	5.7	1	22°41'32.43"N 85°59'27.83"E	2.619
			2	22°41'34.69"N 85°59'32.74"E	2.625



AUTHORIZED SIGNATORY

For AD Powers Pvt. Ltd.
TESTING LAB

Authorised Signatory



AD Powers Private Limited

PVT.LTD. TESTING LAB

QR. NO. CD/488, SECTOR2, DHURWA, RANCHI-834004, JHARKHAND

Email.: - adpower350@gmail.com, Mobile: -7903166826

NABL Accredited Laboratory

TEST REPORT

Reporting Date: -30.1.2023

Report No.ADP/SK/23-24/TR-NO-1/6

Description of Sample: - 01 Bag Sand sample submitted to us for the Specific Gravity tests.

Source: - KHARKI RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

UIN	LEASE DETAILS	AREA (Ha.)	SAMPLE NO.	GEO-COORDINATE	SPECIFIC GRAVITY
KR6	Jambera,Kharkai River	2.08	1	22°46'52.70"N 86° 2'38.80"E	2.629



AUTHORIZED SIGNATORY

For AD Powers Pvt. Ltd.
TESTING LAB

Authorised Signatory



AD Powers Private Limited

PVT.LTD. TESTING LAB

QR. NO. CD/488, SECTOR2, DHURWA, RANCHI-834004, JHARKHAND

Email.: - adpower350@gmail.com, Mobile: -7903166826

NABL Accredited Laboratory

TEST REPORT

Reporting Date: -30.1.2023

Report No.ADP/SK/23-24/TR-NO-1/7

Description of Sample: - 03 Bag Sand sample submitted to us for the Specific Gravity tests.

Source: - SUBARNAREKHA RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

UIN	LEASE DETAILS	AREA (Ha.)	SAMPLE NO.	GEO-COORDINATE	SPECIFIC GRAVITY
SR1	Balidih,Subarnarekha River	12.91	1	22°55'37.48"N 86° 0'53.49"E	2.601
2			22°55'30.36"N 86° 0'48.05"E	2.635	
3			22°55'26.21"N 86° 0'47.89"E	2.629	



AUTHORIZED SIGNATORY

For AD Powers Pvt. Ltd.
TESTING LAB

Authorised Signatory



AD Powers Private Limited

PVT.LTD. TESTING LAB

QR. NO. CD/488, SECTOR2, DHURWA, RANCHI-834004, JHARKHAND

Email.: - adpower350@gmail.com, Mobile: -7903166826

NABL Accredited Laboratory

TEST REPORT

Reporting Date: -30.1.2023

Report No.ADP/SK/23-24/TR-NO-1/8

Description of Sample: - 05 Bag Sand sample submitted to us for the Specific Gravity tests.

Source: - SUBARNAREKHA RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

UIN	LEASE DETAILS	AREA (Ha.)	SAMPLE NO.	GEO-COORDINATE	SPECIFIC GRAVITY
SR2	Bamundih, Gobindpur & Sapada,Subarnarekha River	48.9	1	23° 7'18.50"N 85°55'49.10"E	2.620
			2	23° 7'13.12"N 85°55'51.57"E	2.637
			3	23° 7'3.39"N 85°55'52.68"E	2.606
			4	23° 6'54.81"N 85°55'46.98"E	2.632
			5	23° 6'42.88"N 85°55'42.10"E	2.622



AUTHORIZED SIGNATORY
For AD Powers Pvt. Ltd.
TESTING LAB

Authorised Signatory



AD Powers Private Limited

PVT.LTD. TESTING LAB

QR. NO. CD/488, SECTOR2, DHURWA, RANCHI-834004, JHARKHAND

Email.: - adpower350@gmail.com, Mobile: -7903166826

NABL Accredited Laboratory

TEST REPORT

Reporting Date: -30.1.2023

Report No.ADP/SK/23-24/TR-NO-1/9

Description of Sample: - 10 Bag Sand sample submitted to us for the Specific Gravity tests.

Source: - SUBARNAREKHA RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

UIN	LEASE DETAILS	AREA (Ha.)	SAMPLE NO.	GEO-COORDINATE	SPECIFIC GRAVITY
SR3	Saparam ,Soro & Birdih,Subarnarekha River	95.2	1	23° 7'42.26"N 85°55'2.70"E	2.619
			2	23° 7'44.60"N 85°54'42.32"E	2.608
			3	23° 7'44.38"N 85°54'17.09"E	2.627
			4	23° 7'58.65"N 85°53'53.97"E	2.635
			5	23° 8'17.00"N 85°53'50.38"E	2.640
			6	23° 8'44.84"N 85°53'52.23"E	2.618
			7	23° 9'5.58"N 85°53'42.70"E	2.614
			8	23° 7'45.49"N 85°54'28.28"E	2.607
			9	23° 7'52.35"N 85°54'3.60"E	2.625
			10	23° 8'9.27"N 85°53'49.91"E	2.610



AUTHORIZED SIGNATORY
For AD Powers Pvt. Ltd.
TESTING LAB


Authorised Signatory

**A D POWER PVT.LTD. TESTING LAB****QR.NO. CD/488, SECTOR 2, DHURWA, RANCHI-834004, JHARKHAND****SPECIFIC GRAVITY (IS:2386,PART - 3)****SARAIKELA KHARSAWAN**

SI. NO.	DETAILS	LATITUDE AND LONGITUDE	SAMPLE NO.	SPECIFIC GRAVITY
1	Mouza - Jadudih, District - Saraikela - Kharsawan, Jharkhand. Kharkai River	22°29'37.13"N 85°56'40.83"E	1	2.620
		22°29'39.31"N 85°56'39.65"E	2	2.625
		22°29'41.88"N 85°56'25.99"E	3	2.610
		22°29'41.58"N 85°56'22.64"E	4	2.630
		22°29'39.71"N 85°56'21.01"E	5	2.620
2	Mouza - Sarjamdih & Herma, District - Saraikela - Kharsawan, Jharkhand. Kharkai River	22°30'40.60"N 85°54'52.49"E	6	2.605
		22°30'44.69"N 85°54'53.91"E	7	2.631
		22°30'44.05"N 85°54'48.32"E	8	2.611
		22°30'48.35"N 85°54'51.96"E	9	2.618
		22°30'47.52"N 85°54'46.75"E	10	2.624
3	Mouza - Icha & Balidih, District - Saraikela - Kharsawan, Jharkhand. Kharkai River	22°30'51.83"N 85°54'46.84"E	11	2.628
		22°32'31.97"N 85°54'29.00"E	12	2.602
		22°32'35.59"N 85°54'28.97"E	13	2.638
		22°32'38.95"N 85°54'30.39"E	14	2.630
		22°32'41.96"N 85°54'27.76"E	15	2.621
4	Mouza - Dighi & Laxmipur, District - Saraikela - Kharsawan, Jharkhand. Kharkai River	22°41'49.63"N 85°58'28.36"E	16	2.636
		22°41'52.08"N 85°58'30.07"E	17	2.604
		22°41'52.20"N 85°58'32.75"E	18	2.631
		22°41'54.53"N 85°58'33.36"E	19	2.620
5	Mouza - Samram & Basulikocha, District - Saraikela - Kharsawan, Jharkhand. Kharkai River	22°44'56.97"N 86° 3'35.63"E	20	2.622
		22°44'57.91"N 86° 3'36.80"E	21	2.610
		22°44'58.00"N 86° 3'38.36"E	22	2.630
6	Mouza -Bamundih, District - Saraikela - Kharsawan, Jharkhand. Subarnarekha River	23° 6'54.63"N 85°55'45.43"E	23	2.632
		23° 6'56.21"N 85°55'49.09"E	24	2.640
		23° 6'57.37"N 85°55'47.11"E	25	2.622
		23° 6'59.11"N 85°55'49.59"E	26	2.613
		23° 7'0.79"N 85°55'48.16"E	27	2.605

AUTHORIZED SIGNATORY

for AD Power & Pvt. Ltd.
TESTING LAB

Authorized Signatory





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QR. NO. CD/488, SECTOR2, DHURWA, RANCHI-834004, JHARKHAND

Email.: - adpower350@gmail.com, Mobile: -7903166826

NABL Accredited Laboratory

TEST REPORT

Reporting Date: - 2.12.2022

Report No.ADP/SK/22-23/TR-NO-12/1

Description of Sample: - 05 Bag Sand sample submitted to us for the Specific Gravity tests.

Source: - KHARKAI RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

SI. NO.	DETAILS	LATITUDE AND LONGITUDE	SAMPLE NO.	SPECIFIC GRAVITY
1	Mouza - Jadudih, District - Saraikela - Kharsawan, Jharkhand. Kharkai River	22°29'37.13"N 85°56'40.83"E	1	2.620
		22°29'39.31"N 85°56'39.65"E	2	2.625
		22°29'41.88"N 85°56'25.99"E	3	2.610
		22°29'41.58"N 85°56'22.64"E	4	2.630
		22°29'39.71"N 85°56'21.01"E	5	2.620



For AD Power & Pvt. Ltd.
TESTING LAB

[Signature]
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QR. NO. CD/488, SECTOR2, DHURWA, RANCHI-834004, JHARKHAND

Email.: - adpower350@gmail.com, Mobile: -7903166826

NABL Accredited Laboratory

TEST REPORT

Reporting Date: - 2.12.2022

Report No.ADP/SK/22-23/TR-NO-12/3

Description of Sample: - 04 Bag Sand sample submitted to us for the Specific Gravity tests.

Source: - KHARKAI RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

SI. NO.	DETAILS	LATITUDE AND LONGITUDE	SAMPLE NO.	SPECIFIC GRAVITY
3	Mouza - Icha & Balidih, District - Saraikela - Kharsawan, Jharkhand. Kharkai River	22°32'31.97"N 85°54'29.00"E	1	2.602
		22°32'35.59"N 85°54'28.97"E	2	2.638
		22°32'38.95"N 85°54'30.39"E	3	2.630
		22°32'41.96"N 85°54'27.76"E	4	2.621

For AD Power & Pvt. Ltd.
TESTING LAB

[Signature]
Authorized Signatory

AUTHORIZED SIGNATORY





AD POWER PVT.LTD. TESTING LAB

QR. NO. CD/488, SECTOR2, DHURWA, RANCHI-834004, JHARKHAND

Email.: - adpower350@gmail.com, Mobile: -7903166826

NABL Accredited Laboratory

TEST REPORT

Reporting Date: - 2.12.2022

Report No.ADP/SK/22-23/TR-NO-12/4

Description of Sample: - 04 Bag Sand sample submitted to us for the Specific Gravity tests.

Source: - KHARKAI RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

SI. NO.	DETAILS	LATITUDE AND LONGITUDE	SAMPLE NO.	SPECIFIC GRAVITY
4	Mouza - Dighi & Laxmipur, District - Saraikela - Kharsawan, Jharkhand. Kharkai River	22°41'49.63"N 85°58'28.36"E	1	2.636
		22°41'52.08"N 85°58'30.07"E	2	2.604
		22°41'52.20"N 85°58'32.75"E	3	2.631
		22°41'54.53"N 85°58'33.36"E	4	2.620

For AD Power & Pvt. Ltd.
TESTING LAB


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AD POWER PVT.LTD. TESTING LAB

QR. NO. CD/488, SECTOR2, DHURWA, RANCHI-834004, JHARKHAND

Email.: - adpower350@gmail.com, Mobile: -7903166826

NABL Accredited Laboratory

TEST REPORT

Reporting Date: - 2.12.2022

Report No.ADP/SK/22-23/TR-NO-12/5

Description of Sample: - 03 Bag Sand sample submitted to us for the Specific Gravity tests.

Source: - KHARKAI RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

SI. NO.	DETAILS	LATITUDE AND LONGITUDE	SAMPLE NO.	SPECIFIC GRAVITY
5	Mouza - Samram & Basulikocha, District - Saraikela - Kharsawan, Jharkhand. Kharkai River	22°44'56.97"N 86° 3'35.63"E	1	2.622
		22°44'57.91"N 86° 3'36.80"E	2	2.610
		22°44'58.00"N 86° 3'38.36"E	3	2.630

For AD Power & Pvt. Ltd.
TESTING LAB

DHS
Authorized Signatory

AUTHORIZED SIGNATORY





AD POWER PVT.LTD. TESTING LAB

QR. NO. CD/488, SECTOR2, DHURWA, RANCHI-834004, JHARKHAND

Email.: - adpower350@gmail.com, Mobile: -7903166826

NABL Accredited Laboratory

TEST REPORT

Reporting Date: - 2.12.2022

Report No.ADP/SK/22-23/TR-NO-12/6

Description of Sample: - 05 Bag Sand sample submitted to us for the Specific Gravity tests.

Source: - SUBARNAREKHA RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

Sl. NO.	DETAILS	LATITUDE AND LONGITUDE	SAMPLE NO.	SPECIFIC GRAVITY
6	Mouza -Bamundih, District - Saraikela - Kharsawan, Jharkhand. Subarnarekha River	23° 6'54.63"N 85°55'45.43"E	1	2.632
		23° 6'56.21"N 85°55'49.09"E	2	2.640
		23° 6'57.37"N 85°55'47.11"E	3	2.622
		23° 6'59.11"N 85°55'49.59"E	4	2.613
		23° 7'0.79"N 85°55'48.16"E	5	2.605



For AD Power & Pvt. Ltd.
TESTING LAB

[Signature]
Authorised Signatory

AUTHORIZED SIGNATORY

ANNEXURE-17

COPY OF WORK ORDER



GOVERNMENT OF JHARKHAND
DEPARTMENT OF MINES & GEOLOGY
DIRECTORATE OF GEOLOGY
ENGINEERS' HOSTEL, 2ND FLOOR, DHURWA, RANCHI
E-MAIL- dir-geology@jharkhandmail.gov.in

Letter No:- Bhu.Ni. Anve-95/2021 - 2135

M/Ranchi, Date:- 13.10.2021

From,
Vijay Kumar Ojha
Director, Geology

To,
M/s Atmos Sustainable Solutions Private Limited,
A QCI-NABET-Approved EIA Consultant
A-73, 3rd Floor, Sector-65, Noida-201301
e-mail-gilbertmervyn@gmail.com

Subject: Work Order for Preparation/Updation and Revision of District Survey Report (DSR) of Sand in Jharkhand.

Sir,

This is to inform you that M/s Atmos Sustainable Solutions Private Limited has been submitted lowest financial offer for Preparation/Updation and Revision of District Survey Report (DSR) of Sand under the guideline of Enforcement and Monitoring Guidelines for Sand Mining 2020 (EMGSM-2020), Sustainable Sand Mining Management Guidelines 2016 (SSMMG-2016), Ministry of Environment, Forest and Climate Change January 2020 (MoEF&CC) and follow Gazette of India 15th January 2016 and 25th July 2018 and also guidance of Hon'ble Court of Jharkhand and Supreme Court of India. In consequence of that Directorate of Geology intend to give work order for Preparation/Updation and Revision of District Survey Report (DSR) of Sand on the lowest rate decided by the Departmental Purchase Committee.

2. Scope of work:-

- i. Preparation of District Survey Reports of Sand for 7 districts of Jharkhand (as per list contained in this letter further).
- ii. Preparation of DSR of Sand should be done as per the procedure and the parameters lay down under the Sustainable Sand Mining Management Guidelines 2016 and Enforcement & Monitoring Guidelines for Sand Mining 2020 read in sync with each other and carried out as per format prescribed by the MoEF& CC, GoI vide Notification dated 25 July 2018.
- iii. In preparation of DSR of other minor minerals including Sand, various guidelines and direction given by Honourable NGT and MoEF& CC, GoI and SELAA Jharkhand shall be strictly adhered to.

(Handwritten signature)



- iv. The selected agency will have to update the DSR as per prevailing law, guidelines, rules and regulations issued by competent authority.
- v. The selected agency will have to prepare DSR and approval there of as existing law and guideline/circular issued by the competent authority.
- vi. This will be a continues and progressive work by way of updation of relevant information as per guideline over a period of 5 (Five) year.
- vii. District Survey Report (DSR) shall be submitted to Respective DMO through respective Assistant Director, Geology who shall after due diligence forward that to Deputy Commissioner of the concerned district for verification and needful action.
- viii. The concerned Deputy Commissioner will verify the DSR in respect of the relevant facts pertaining to the physical and geographical features of the district which shall be in line with scientific findings based on the parameters prescribed in the Sustainable Sand Mining Management Guidelines 2016 and Enforcement & Monitoring Guidelines for Sand Mining 2020. After such verification, the Deputy Commissioner after following all procedure to check the DSR and will get it vetted by Committee at district level shall forward the DSR for examination and evaluation by the State Expert Appraisal Committee (SEAC) having regarding to the fact that the SEIAA comprises of technical/scientific experts.
- ix. The SEAC after appraisal of the report shall forward it to the SEIAA for consideration and approval if it meets all scientific/technical requirements.
- x. DSR approved by the SEIAA shall be taken as final outcome of the Agency and will be submitted by the agency to Director, Geology/Director Mines.
- xi. Any modification/ correction if required and asked to do after scrutiny of District Survey Report (DSR) at various levels shall be done under time limit by the agency.
- xii. NGT order dt. 05.09.2022 of original application No. 54/2022/EZ must be complied.

3. District Details: -

Following is the list of district your agency has been allotted for DSR Preparation-

Sl. No.	District	Unit Rate (Rs. In Lakh) (Inclusive of all taxes)
1.	East Singhbhum	Rs. 20.00 (Rupees Twenty Lakh only)
2.	West Singhbhum	Rs. 18.00 (Rupees Eighteen Lakh only)
3.	Saraikela-Kharsawan	Rs. 16.00 (Rupees Sixteen Lakh only)
4.	Dhanbad	Rs. 16.00 (Rupees Sixteen Lakh only)

[Handwritten Signature]



5.	Pakur	Rs. 16.00 (Rupees Sixteen Lakh only)
6.	Simdega	Rs. 18.00 (Rupees Eighteen Lakh only)
7.	Gumla	Rs. 18.50 (Rupees Eighteen Lakh Fifty Thousand only)

4. All terms and conditions mentioned in Expression of Interest No- 08/2021-22 of Directorate of Geology, Department of Mines & Geology, Government of Jharkhand will be applicable and the agency will execute the work accordingly.
5. The Agency shall have to submit the Performance Security Deposit in the form of Bank Guarantee. Performance security deposit shall be 20% of the contract value excluding the taxes. The performance security deposit shall be returned after completion of the warranty period to the satisfaction of the Directorate of Geology and satisfactory performance of the work.
6. You are directed to provide email ID and mobile numbers of each member of your survey team for better communication.
7. Your agency will report progress of work fortnightly to project in-charge as well as Directorate of Geology.
8. Your agency will work under the supervision of authorized representative of Directorate of Geology.
9. **Payment and Termination of Work Order:**
 - i. Payment shall be made after approval of District Survey Report (DSR) by the SEIAA. The company shall submit certified final bill after completion of work to the Directorate of Geology, 2nd floor Engineers' Hostel no-2, Dhurwa Ranchi with completion certificate duly certified by authorized field officer of Directorate of Geology and concern District Mining Officer.
 - ii. In case of any breach of Terms & Conditions mentioned in work order or in the Expression of Interest No. 08/2021-22 of Directorate of Geology, Department of Mines & Geology, work order will be cancelled and the security money and payment will be forfeited after giving 15 day of notice.
 - iii. Any dispute will be mutually settled by the parties. In case any further legal dispute, jurisdiction will be Ranchi only.
10. This work order is being issued after the approval of competent authority.



Yours faithfully

(Signature)
13.10.2022
(Vijay Kumar Ojha)
Director, Geology

ANNEXURE-18

EC LETTER OF EXISTING SAND

GHATS





State Level Environment Impact Assessment Authority, Jharkhand

Nursery Complex, Near Dhurwa Bus Stand, P.O.-P.S.-Dhurwa, Ranchi, Jharkhand-834 004

E-mail: msseiaa.jhk@gmail.com/chr-seiaajhr@gov.in

website: www.jseiaa.org

Letter No.- EC/SEIAA/2018-19/2128/2018/ 257

Ranchi, Date : 05.06.19,

To: **Shri Lalit Kumar**
In Charge (Sand Mining)
M/S J.S.M.D.C. Ltd.
At : Khanij Nigam Bhawan,
P.O.: Doranda, Ranchi,
Jharkhand – 834002.

Sub: Environmental Clearance for the project "Soro (Jorgodih) Sand Ghat of M/s JSMDCLtd. at Khata No.- 700, Plot No.- 2106 (P) at Village- Soro (Jorgodih), Tehsil & P.S- Ichagarh, Dist. : Saraikela- Kharsawan, Jharkhand (4.90 Ha)." (Proposal No.SIA/JH/MIN/36779/2019)

Sir,

It is in reference to "Soro (Jorgodih) Sand Ghat of M/s JSMDCLtd. at Khata No.- 700, Plot No.- 2106 (P) at Village- Soro (Jorgodih), Tehsil & P.S- Ichagarh, Dist. : Saraikela- Kharsawan, Jharkhand (4.90 Ha)" submitted by you for seeking prior Environmental Clearances (EC).

This is a Sand Mining Project with an area of 4.9 Ha. The latitude and longitude of the project site is 23°07'37.61"N to 23°07'37.06"N and 85°54'41.93"E to 85°54'47.24"E. The nearest railway station is Sirkadih at a distance of 5.0 km in NW direction and the nearest airport is Ranchi at a distance of 70 km in NW direction. 3.0 KLD water will be used for drinking purpose and dust suppression on 'Kacha' haul road, sourced from tube well and Suvern rekha River. Depending upon the location, thickness of sand, deposition, agricultural land/riverbed, the method of mining will be open-cast and preferably manual and specific circumstances/situation semi mechanised or mechanised (As per direction contained in Sustainable Sand Mining Management Guideline, 2016 manual method of mining shall be preferred over any other method).

The indicated project cost is Rs 48.5 Lakh and a provision of Rs 3.55 Lakh has been indicated for Environment management.

The proposed estimated mineral reserve is 96,048 cum as per approved mine plan.

Year-wise Production as per Approved Mining Plan Report for five years is as follows:

1 st Year	:	74065.75 cum
2 nd Year	:	59252.6 cum
3 rd Year	:	59252.6 cum
4 th Year	:	59252.6 cum
5 th Year	:	59252.6 cum



The daily production as per mine plan is 370.32 cum for 1st year & 296.26 cum for next 4 years.

DFO, Wildlife, Elephant Project Jamsedpur vide letter no. 20190524, dated - 24.05.19 certified that the distance of Notified forest Land is at 250 m from project site and not within 10 km from National Park, Bio-Diversity & Sanctuary and proposed project is not situated in any ESZ.

DFO, Saraikela vide letter no. 1072, dated - 23.05.19 certified that the distance of notified forest is 290 m from project site.

The CO, Ichagarh letter no. 337, dated - 17.05.19 has mentioned the plot no. of the project is not recorded as "Jangle Jhari" in the Khatiyar or Register -II .

DMO, Saraikela vide memo no. 337, dated 24.05.19 certified that any other lease is not within 500 m radius from proposed project site.

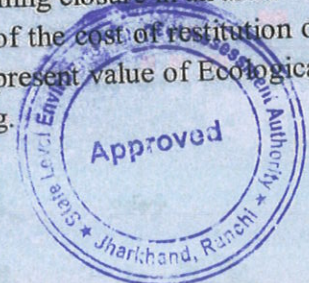
The proposal was appraised by State Level Expert Appraisal Committee (SEAC) and recommended for grant of Environmental Clearance in its meeting held on 27th, 28th, 29th & 30th May, 2019 in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF & CC O.M dated 12.12.18.

State Level Environment Level Impact Assessment Authority (SEIAA), Jharkhand in its meeting held on 03rd June, 2019 discussed the project proposal along with recommendations made by SEAC and decided to grant EC to the project.

Following the decision of SEIAA, as mentioned above, Environmental Clearance is hereby issued to "Soro (Jorgodih) Sand Ghat of M/s JSMDC Ltd. at Khata No.- 700, Plot No.- 2106 (P) at Village- Soro (Jorgodih), Tehsil & P.S- Ichagarh, Dist. : Saraikela- Kharsawan, Jharkhand (4.90 Ha)" alongwith the following conditions -

A. Specific Conditions:

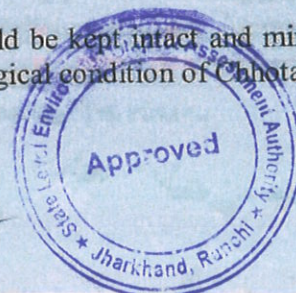
1. This Environmental Clearance is valid subject to the following condition below -
That this project has-
 - a. Obtained all legal rights to operate at concerned place.
 - b. Complied with all existing concerned laws of the land and
 - c. Complied with the decisions of SEIAA on the issue of Environmental Clearance till date.
2. This EC letter is subject to Hon'ble NGT order dated : 13.09.2018 and MoEF & CC O.M. dated : 12.12.2018.
 - a. Providing for EIA, EMP and therefore public consultation for all areas from 5 to 25 Ha falling under category B-2 at par with category B-1 by SEIAA/SEAC as well as for cluster situation wherever it is not provided.
 - b. Form-1M be made more comprehensive for areas of 0 to 5 Ha by dispensing with the requirement for public consultation to be evaluated by SEAC for recommendation of grant of EC by SEIAA instead of DEIAA/DEAC.
 - c. If a cluster or an individual lease size exceeds 5 ha the EIA/EMP be made applicable in the process of grant of prior Environmental Clearance.
 - d. EIA and /or EMP be prepared for the entire cluster in terms of recommendations 5 (supra) of the guidelines for the purpose of recommendations 6, 7 and 8 thereof.
 - e. Revise the procedure to also incorporate procedure with respect to annual rate of replenishment and time frame for replenishment after mining closure in an area.
 - f. The MoEF & CC to prepare guidelines for calculation of the cost of restitution of damage caused to mined- out areas along with the Net present value of Ecological services forgone because of illegal or unscientific mining.



3. The Environmental clearance is subject to grant of Mining Lease and will be co-terminus with the mining lease period.
4. As per EIA notification, 2006 and Supreme Court judgement in Deepak Kumar, Gram Sabha is a major component of EC for this category of project. In all these projects Gram Sabha report has not been submitted. The EC of this case is being recommended subject to **submission of the Gram Sabha consent.**
5. The mining work will be open-cast and preferably manual and specific circumstances/ situation semi mechanised (**As per direction contained in SSMMG, 2016 manual method of mining shall be preferred over any other method**). No mechanical work or drilling / blasting should be involved at any stage.
6. The project proponent shall ensure that wherever deployment of labour attracts the Mines Act, the provision thereof shall be strictly followed. Also PP shall ensure that stipulations mentioned in MoEF OM No.- J-13012/12/2013-IA-II(I), dated- 24th December, 2013 and SEIAA, Jharkhand guideline dated 07.05.2013 are adhered to.
7. For the green belt development in the mining area / transport road sides / other land area saplings available in the forest nursery / private nursery should also be considered for the mentioned purpose instead of the Trees / Plants mentioned in the PFR / Presentation copies of the proposed mine.
8. No sand mining activities will be carried out in upstream or downstream within 500 m of railways, road, bridge, water intake, wires & notified aquarium or breeding places.
9. Project Proponent shall appoint a Monitoring Committee to monitor the replenishment study, traffic management, levels of production, River Bank erosion and maintenance of Road etc and shall submit report to SEIAA, JSPCB and DMO after every monsoon i.e. by end of November (30th) of that year. Also after receding of flood / water (after monsoon) a study has to be conducted in mining lease area and list of flora & fauna is to be prepared and submit report to SEIAA, JSPCB and DMO.
10. Environmental clearance is subject to obtaining prior clearance from forestry and Wildlife angle including clearance from standing committee of NBWL, as may be applicable to this project (in case any fauna occurs / is found in the Project area or if the area involves forest land or Wildlife habitat i.e. core zone of elephant/tiger reserve etc. and or located with in 10 km. of protected area).
11. The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered ^{flora &} fauna.
12. The project proponent shall prepare the plan of mining in conformity with the mine lease conditions and the Rules prescribed in this regard clearly showing the no work zone in the mine lease i.e. the distance from the bank of river to be left un-worked (Non mining area), distance from the bridges etc. It shall be ensured that no mining shall be carried out during the monsoon season. Due consideration will be given to points raised in Supreme Court judgement and SEIAA guidelines.
13. The project proponent shall undertake adequate safeguard measures during extraction of river bed material and ensure that due to this activity the hydro-geological regime of the surrounding area shall not be affected.



14. The project proponent will provide protective respiratory devices to workers working in dusty areas and they shall also be provided with adequate training and information on safety and health aspects. Periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly.
15. Solid waste material viz., gutkha pouchs, plastic bags, glasses etc. to be generated during project activity will be separately stored in bins and managed as per Solid Waste Management rules.
16. Natural /customary paths used by villagers should not be obstructed at any time by the activities proposed under the project. Transportation of sand is to be carried out with consent of Villagers and Trucks are to be covered with Tarpaulin.
17. Local flora may be planted in the Core Zone of the Mining Lease area.
18. Concealing factual data or submission of false/fabricated data or submitting false information and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986..
19. Environmental clearance is subject to final order of the Hon'ble Supreme Court of India / MOEF Guidelines applicable to Minor Minerals.
20. This Environmental Clearance is granted subject to final outcome of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT, MoEF & CC and any other Court of Law, if any, as may be applicable to this project.
21. PP shall maintain minimum distance from Reserved / Protected Forests as stipulated in applicable guidelines.
22. There shall be no external dump(s). Monitoring and management of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Jharkhand State Pollution Control Board, Ranchi and its nearest Regional Office on six monthly basis.
23. The project proponent should implement suitable conservation measures to augment ground water resources in the area in consultation with the Ground Water Directorate, Government of Jharkhand / Central Ground Water Board.
24. Effective safeguard measures should be taken to control fugitive emissions so as to ensure that RSPM (PM10 and PM 2.5) levels are within prescribed limits.
25. Pre-placement medical examination and periodical medical examination of the workers engaged in the project shall be carried out and records maintained.
26. Proper safety measures as per statutory requirement are to be implemented around the mined out Pit prior to closure of site.
27. A final mine closure Plan along with corpus fund duly approved by Competent Authority shall be submitted to the Jharkhand State Pollution Control Board, Ranchi and to concerned DMO in advance of final mine closure for approval.
28. The project proponent shall obtain Consent to establish and Consent to Operate from the Jharkhand State Pollution Control Board, Ranchi and effectively implement all the conditions stipulated therein
29. At least 1.5 meter from the river bed sand should be kept intact and mining can be done above this cushion of sand considering the geological condition of Chhotanagpur plateau.



B. General conditions:

As per the latest guidelines of MoEF & CC regarding Sustainable Sand Mining Management Guidelines 2016 -

1. EC is subject to having valid lease and all statutory clearance as applicable.
2. Monitoring Committee including Local Panchayat to check on traffic due to transportation and submit an annual report on the same.
3. To maintain safety and stability of Riverbanks i.e. 3 meter or 10% of the width of the River whichever is more will be left intact as no mining zone.
4. Ultimate working depth shall be up to 3.0 m from Riverbed level and not less than one meter from the water level of the River channel whichever is reached earlier.
5. The directions given by the Hon'ble Supreme Court of India vide order dated 27.02.2012 in Deepak Kumar case [SLP(C) Nos.19628-19629 of 2009] and order dated 05.08.2013 of the Hon'ble National Green Tribunal in application No.171/2013 may be strictly followed.
6. The SEIAA, Jharkhand or any other competent Authority may alter modify the above conditions or stipulate any further condition in the interest of Environment Protection.
7. All the provisions made and restrictions imposed as covered in the Minor Mineral Rule, shall be complied with, particularly regarding Environment Management Practices and its fund management and Payment of compensation to the land owners.
8. District level Survey Report should be prepared and area suitable for mining and area prohibited for mining be identified.
9. No River sand mining be allowed in rainy season.
10. To submit annual replenishment report certified by an authorized agency. In case the replenishment is lower than the approved rate of production, then the mining activity/ production levels shall be decreased / stopped accordingly till the replenishment is completed.
11. In River flood plain mining a buffer of 3 meter to be left from the River bank for mining.
12. In mining from agricultural field a buffer of 3 meter to be left from the adjacent field.
13. Mining shall be done in layers of 1 meter depth to avoid ponding effect and after first layer is excavated, the process will be repeated for the next layers.
14. No stream should be diverted for the purpose of sand mining. No natural water course and/ or water resources are obstructed due to mining operations.
15. No blasting shall be resorted to in River mining and without permission at any other place.
16. Depending upon the location, thickness of sand, deposition, agricultural land/Riverbed, the method of mining may be manual, semi-mechanized or mechanized; however, manual method of mining shall be preferred over any other method.
17. Mining should be done only in area / stretch identified in the District Level Survey Report suitable for mining and so certified by the Sub- Divisional Level Committee after site visit.



18. Mining should begin only after pucca pillar marking the boundary of lease area is erected at the cost of the lease holder after certification by the mining official and its geo coordinates are made available to the District Level Committee.
19. The top soil in case of surface land mining shall be stored temporarily in an earmarked site and concurrently used for land reclamation.
20. The EC holder shall keep a correct account of quantity of mineral mined out, dispatched from the mine, mode of transport, registration number of vehicle, person in-charge of vehicle and mine plan. This should be produced before officers of Central Government and State for inspection.
21. For each mining lease site the access should be controlled in a way that vehicles carrying mineral from that area are tracked and accounted for.
22. The State / District Level Environment Committee should use technology like Bar Coding, Information and Communications Technology (ICT), Web based and ICT enabled services, mobile SMS App etc. to account for weight of mineral being taken out of the lease area and the number of trucks moving out with the mineral.
23. There should be regular monitoring of the mining activities in the State to ensure effective compliance of stipulated EC conditions and of the provisions under the Minor Mineral Concessions Rules framed by the State Government.
24. Noise arising out of mining and processing shall be abated and controlled at source to keep within permissible limit.
25. Restricted working hours Sand mining operation has to be carried out between sun rise to sun set.
26. The pollution due to transportation load on the environment will be effectively controlled and water sprinkling will also be done regularly.
27. Air Pollution due to dust, exhaust emission or fumes during mining and processing phase should be controlled and kept in permissible limits specified under environmental laws.
28. The mineral transportation shall be carried out through covered trucks only and the vehicles carrying the mineral shall not be overloaded. Wheel washing facility should be installed and used.
29. The mining operations are to be done in a systematic manner so that the operations shall create a major visual impact on the site.
30. Restoration of flora affected by mining should be done immediately. Twice the number of trees destroyed by mining to be planted preferably of indigenous species. Each EC holder should plant and maintain for lease period at least 50 gabion plantation in area near lease and road connecting lease area.
31. No mining lease shall be granted in the forest area without forest clearance in accordance with the provisions of the Forest Conservation Act, 1980 and the rules made thereunder.
32. Protection of turtle and bird habitats shall be ensured.
33. No felling of tree near quarry shall be allowed. For mining lease within 10 km of the National Park / Sanctuary or in Eco-Sensitive Zone of the Protected Area, recommendation of Standing Committee of National Board of Wild Life (NBWL) have to be obtained as per the Hon'ble Supreme Court order in I.A. No. 460 of 2004.



34. Spring sources should not be affected due to mining activities. Necessary Protection measures are to be incorporated.
35. Removal, stacking and utilization of top soil in mining are should be ensured. Where top soil cannot be used concurrently, it shall be stored separately for future use keeping in view that the bacterial organism should not die and should be spread nearby area.
36. The EC should stipulate conditions for adequate steps to check soil erosion and control debris flow etc. by constructing engineering structures.
37. Use of oversize material to control erosion and movement of sediments.
38. No overhangs shall be allowed to be formed due to mining and mining shall not be allowed in area where subsidence of rocks is likely to occur due to steep angle of slope.
39. No extraction of sand in land slide prone areas shall be carried out.
40. Controlled clearance of riparian vegetation to be undertaken
41. Site clearance and tidiness is very much needed to have less visual impact of mining.
42. Dumping of waste shall be done in earmarked places as approved in Mining Plan.
43. Rubbish burial shall not be done in the Rivers.
44. The EC holder shall take all possible precautions for the protection of environment and control of pollution.
45. Effluent discharge should be kept to the minimum and it should meet the standards prescribed.
46. Mining activities 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.
47. Vehicles used for transportation of sand are to be permitted only with of fitness and PUC Certificates.
48. Junction at take-off point of approach road with main road be properly developed with proper width and geometry required for safe movement of traffic by concession holder at his own cost.
49. Project Proponent shall ensure that the road may not be damaged due to transportation of the mineral; and transport of minerals will be as per IRC Guidelines with respect to complying with traffic congestion and density.
50. No stacking allowed on road side along National Highways.
51. The Project Proponent shall undertake phased restoration, reclamation and rehabilitation of land affected by mining and completes this work before abandonment of mine.
52. Site specific plan with eco-restoration should be in place and implemented.
53. Health and safety of workers should be taken care of.
54. The Project Proponent shall make arrangement for drinking water, first aid facility (along with species specific anti-venom provisioning) in case of emergency for the workers.
55. The Project Proponent shall report monitoring data on replenishment, traffic management, levels of production, River Bank erosion and maintenance of Road etc.

Pat

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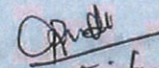


56. The project proponent shall submit six monthly report on the status of compliance of the stipulated Environmental Clearance condition including result of monitored data (both in hard copies as well as by e-mail) to the SEIAA/JSPCB/CPCB/Regional Office of MoEF & CC.

57. Project Proponent shall appoint an Occupational Health Specialist for Regular and Periodical medical examination of the workers engaged in the Project and records maintained: also Occupational health check-ups for workers having some ailments like BP, diabetes, habitual smokers, etc. shall be undertaken once in six months and necessary remedial/preventive measures taken accordingly. Recommendations of National Institute for labour for ensuring good occupational environmental for mine workers would also be adopted.

C. Other points:

1. The Authority reserves the right to add any new condition or modify the above conditions or to revoke the clearance if conditions stipulated above are not implemented to the satisfaction of Authority or for that matter for any other Administrative reason.
2. The Environmental Clearance accorded shall be valid for the period of lease of the mine, the PP does not increase production rate and alter lease area during the validity of Environmental Clearance.
3. In case of any deviation or alteration in the project proposed from those submitted to SEIAA, Jharkhand for clearance, a fresh reference should be made to SEIAA to assess the adequacy of the conditions imposed and to incorporate any new conditions if required.
4. The above stipulations would be enforced among others under the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous Wastes (Management, Handling and Tran boundary Movement) Rules, 2008 and the Public Liability Insurance Act, 1991 along with their amendments and rules made there under and also any other orders passed by the Hon'ble Supreme Court of India/ High Court of Jharkhand and any other Court of Law relating to the subject matter.
5. 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.

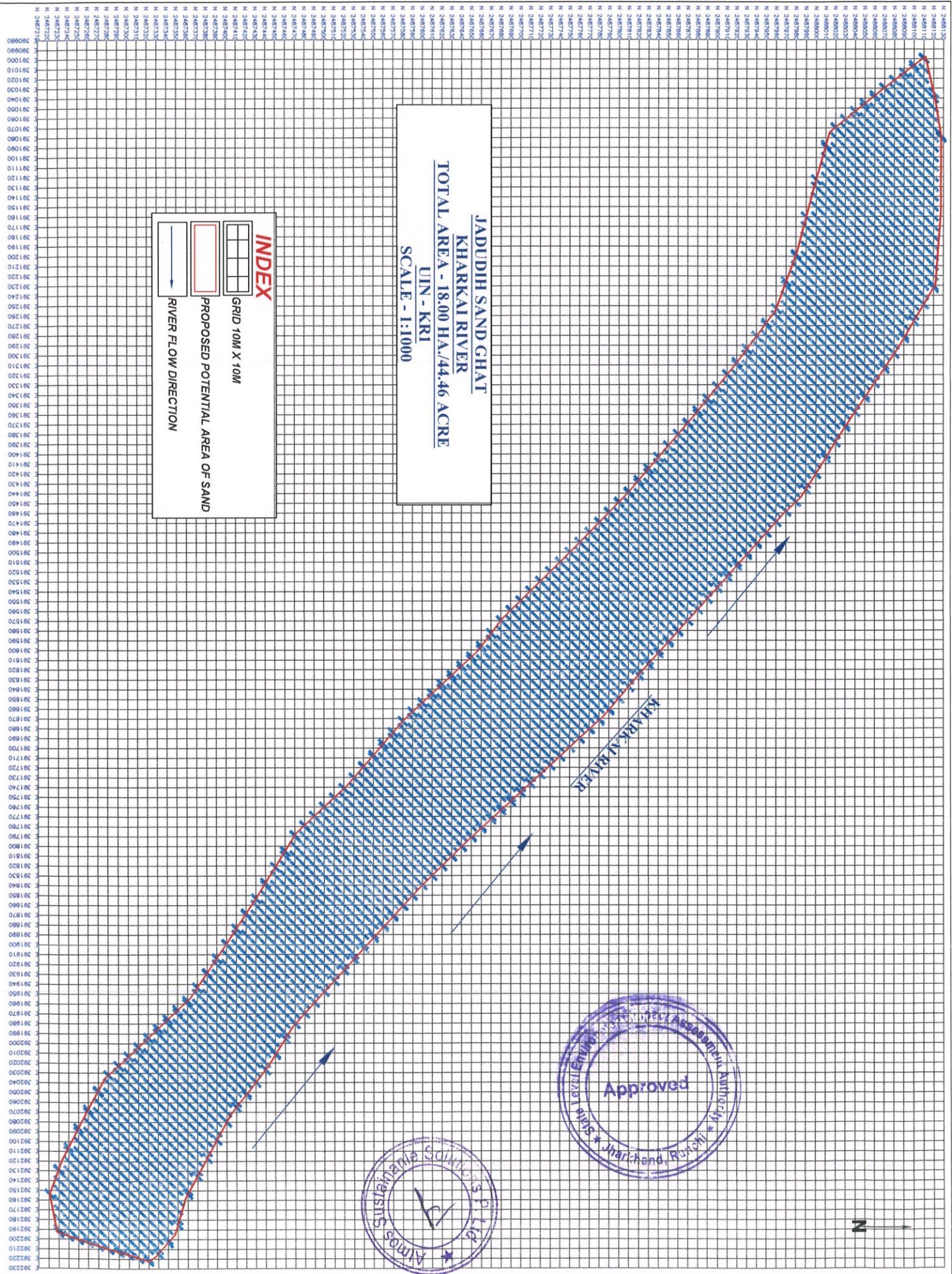

Member Secretary
State Level Environment Impact
Assessment Authority, Jharkhand.



ANNEXURE-19




10M X 10M GRID MAP WITH
CROSS SECTION

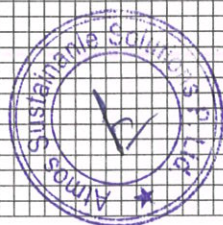


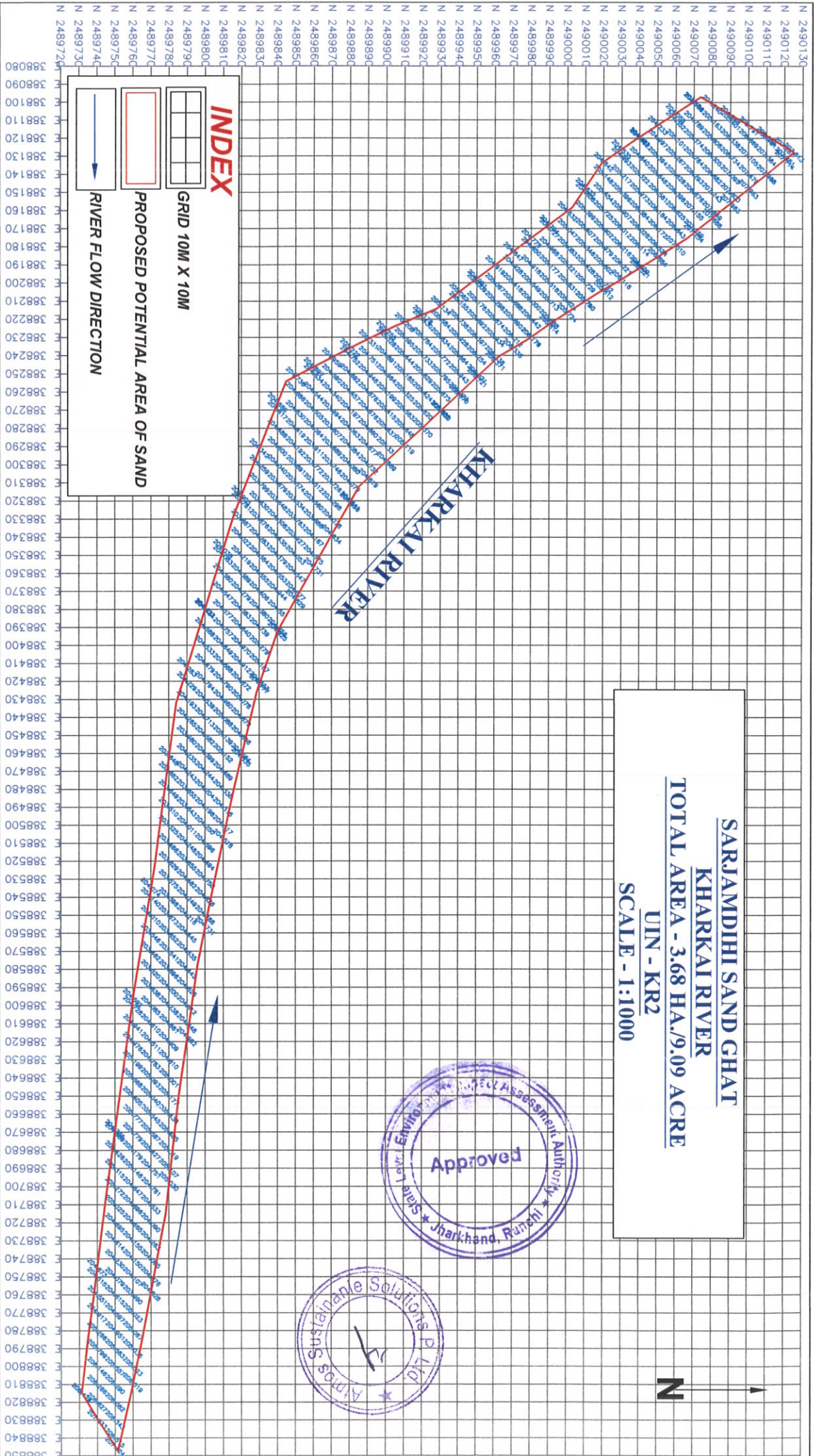


JADUDIH SAND GHAT
KHARKAI RIVER
TOTAL AREA - 18.00 HA./44.46 ACRE
UIN - KRI
SCALE - 1:1000

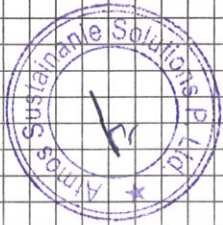
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-  GRID 10M X 10M
-  PROPOSED POTENTIAL AREA OF SAND
-  RIVER FLOW DIRECTION





SARJAMDIHI SAND GHAT
KHARKKAI RIVER
TOTAL AREA - 3.68 HA./9.09 ACRE
UN - KR2
SCALE - 1:1000

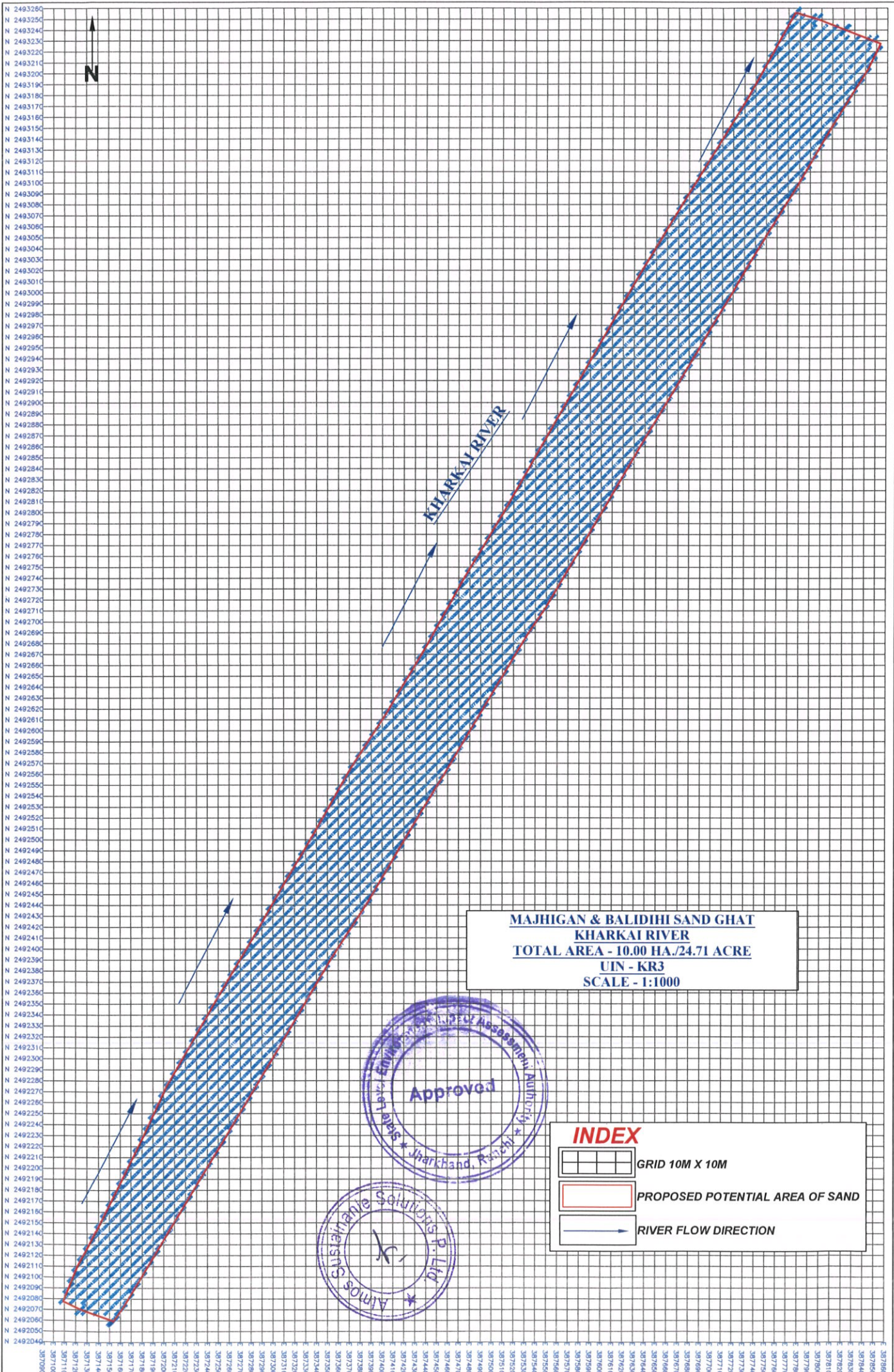


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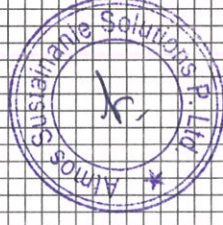
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PROPOSED POTENTIAL AREA OF SAND

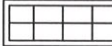


RIVER FLOW DIRECTION



MAJHIGAN & BALIDIHI SAND GHAT
KHARKAI RIVER
TOTAL AREA - 10.00 HA./24.71 ACRE
UIN - KR3
SCALE - 1:1000



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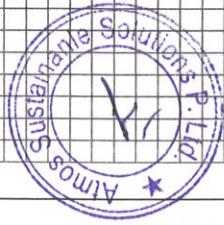
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KHARKAI RIVER



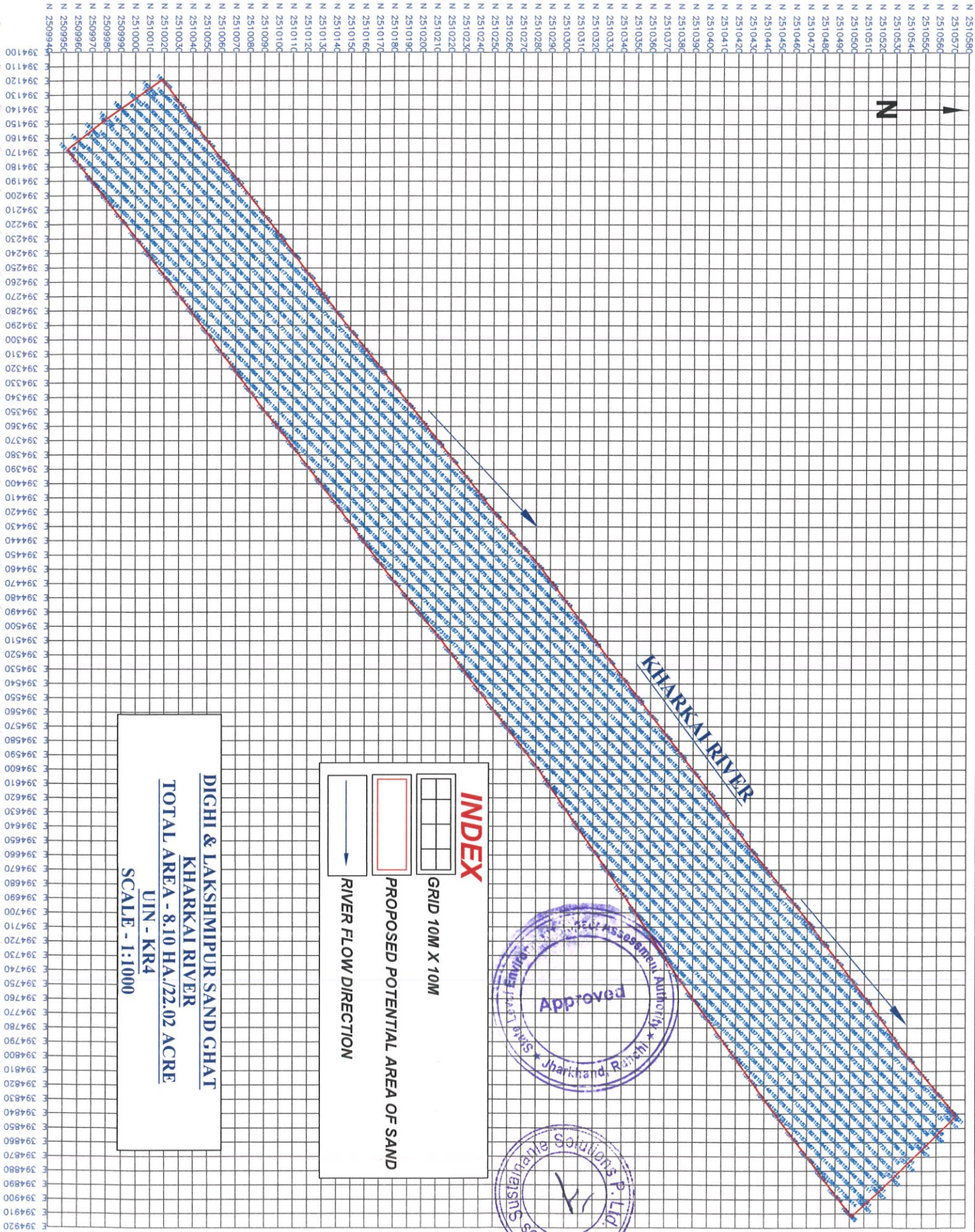
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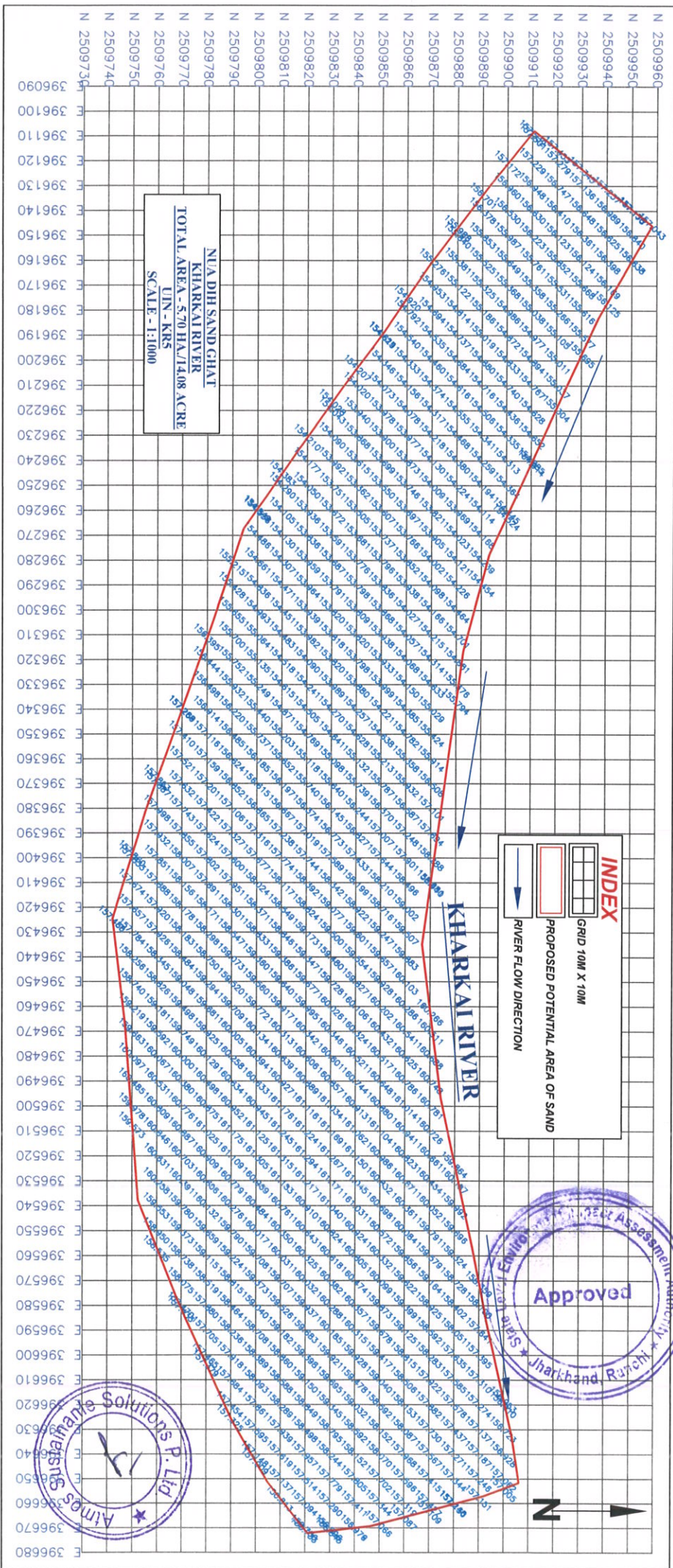
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PROPOSED POTENTIAL AREA OF SAND

RIVER FLOW DIRECTION

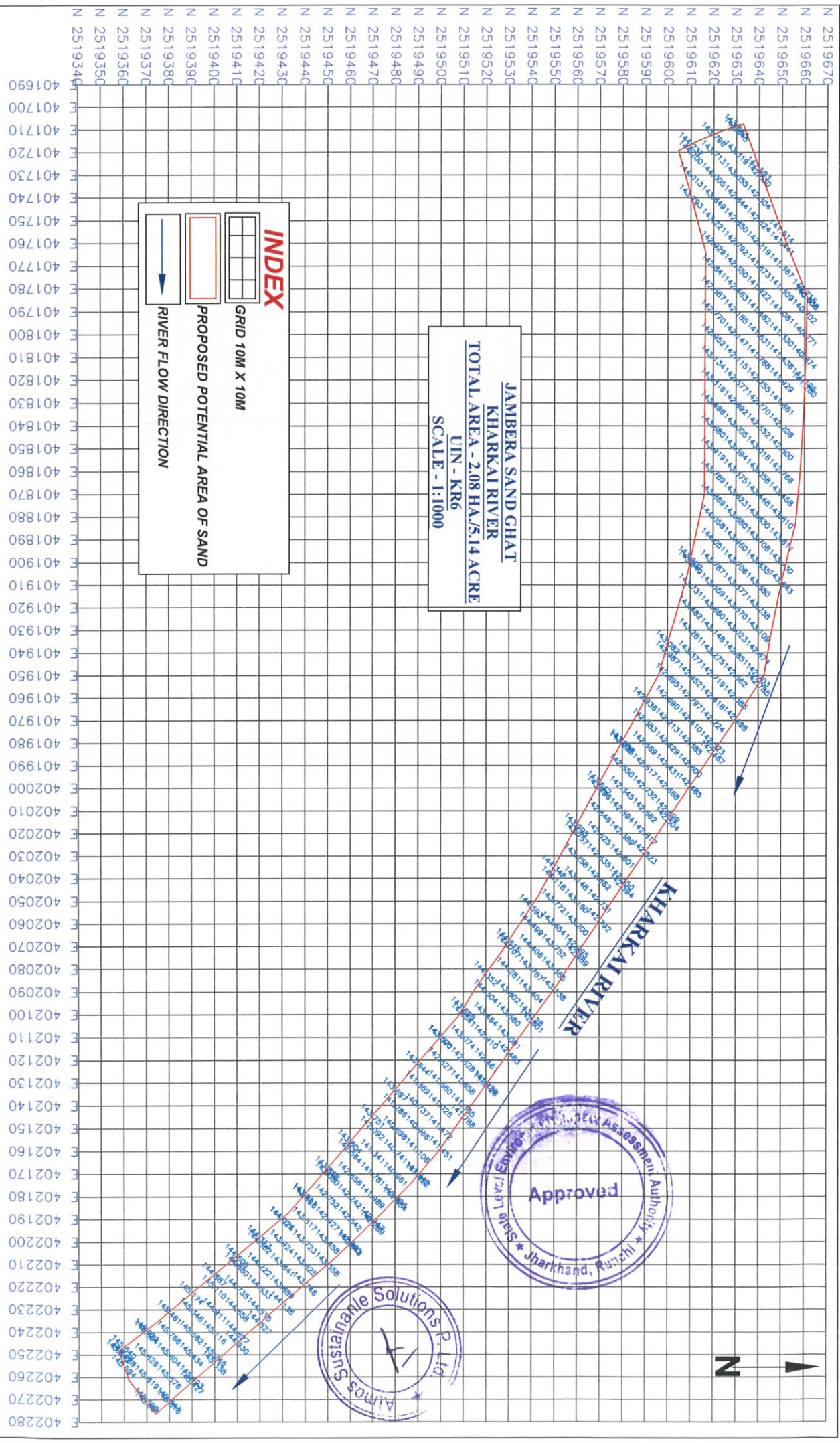
DIGHI & LAKSHMIPUR SAND GHAT
KHARKAI RIVER
TOTAL AREA - 8.10 HA./22.02 ACRE
UN - KR4
SCALE - 1:1000

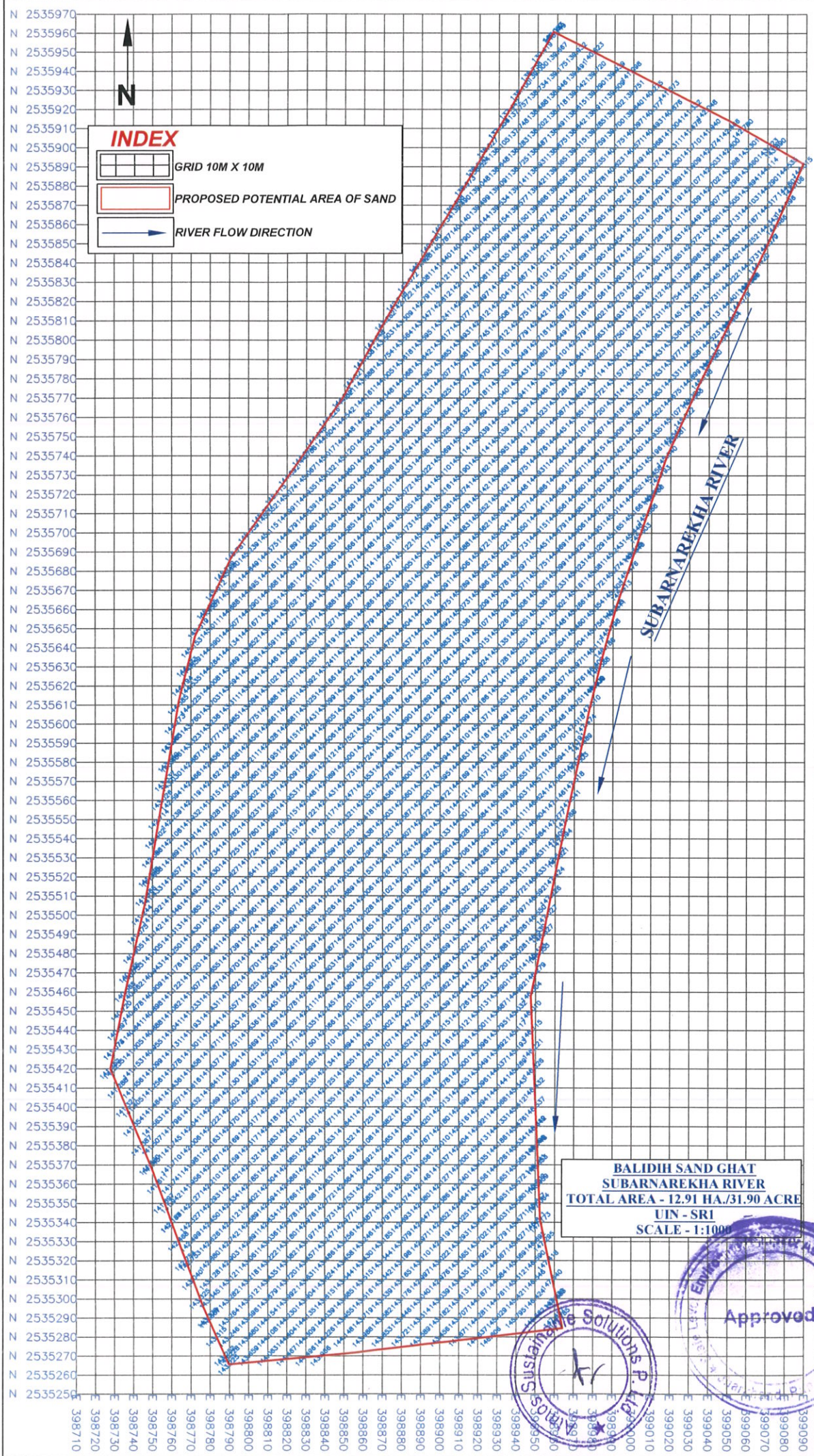




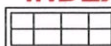


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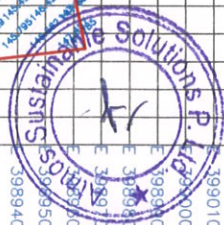


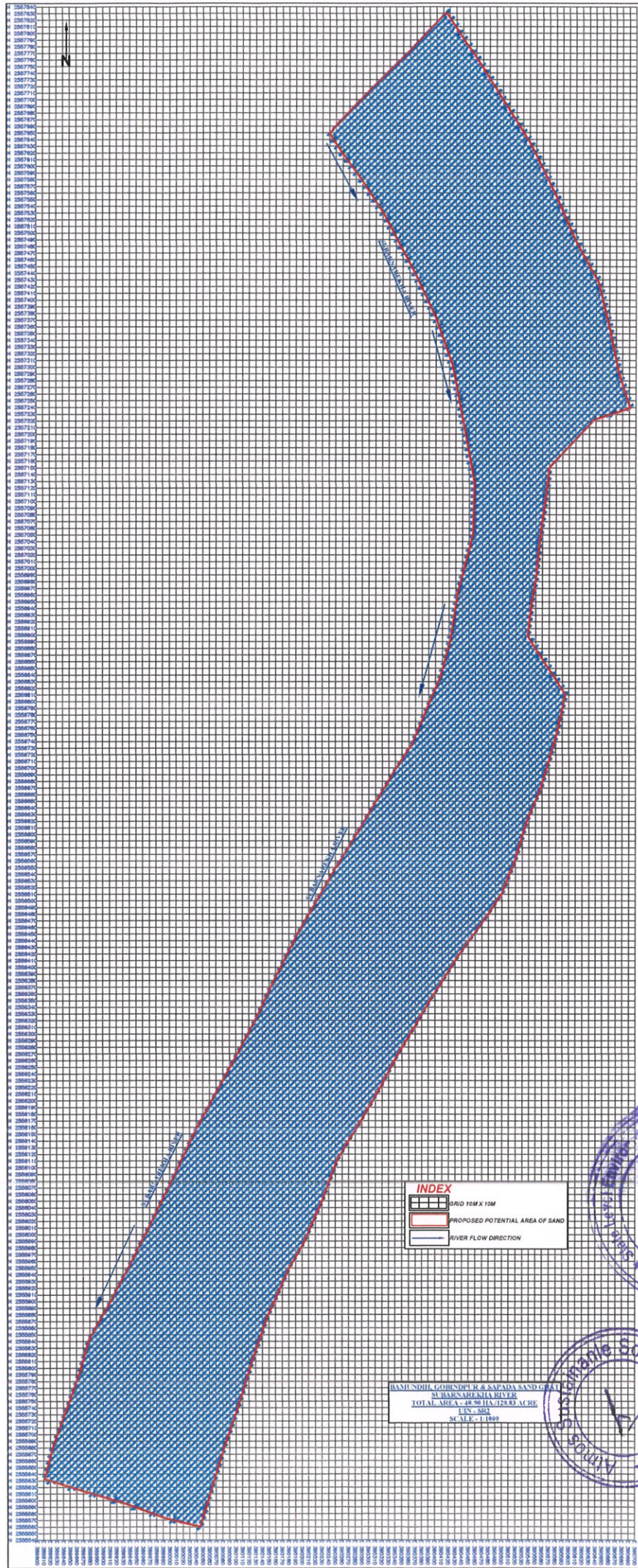


INDEX

-  GRID 10M X 10M
-  PROPOSED POTENTIAL AREA OF SAND
-  RIVER FLOW DIRECTION

BALIDIH SAND GHAT
SUBARNAREKHA RIVER
TOTAL AREA - 12.91 HA./31.90 ACRE
UIN - SRI
SCALE - 1:1000

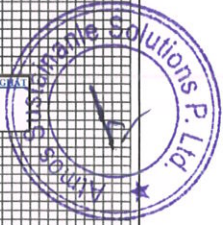


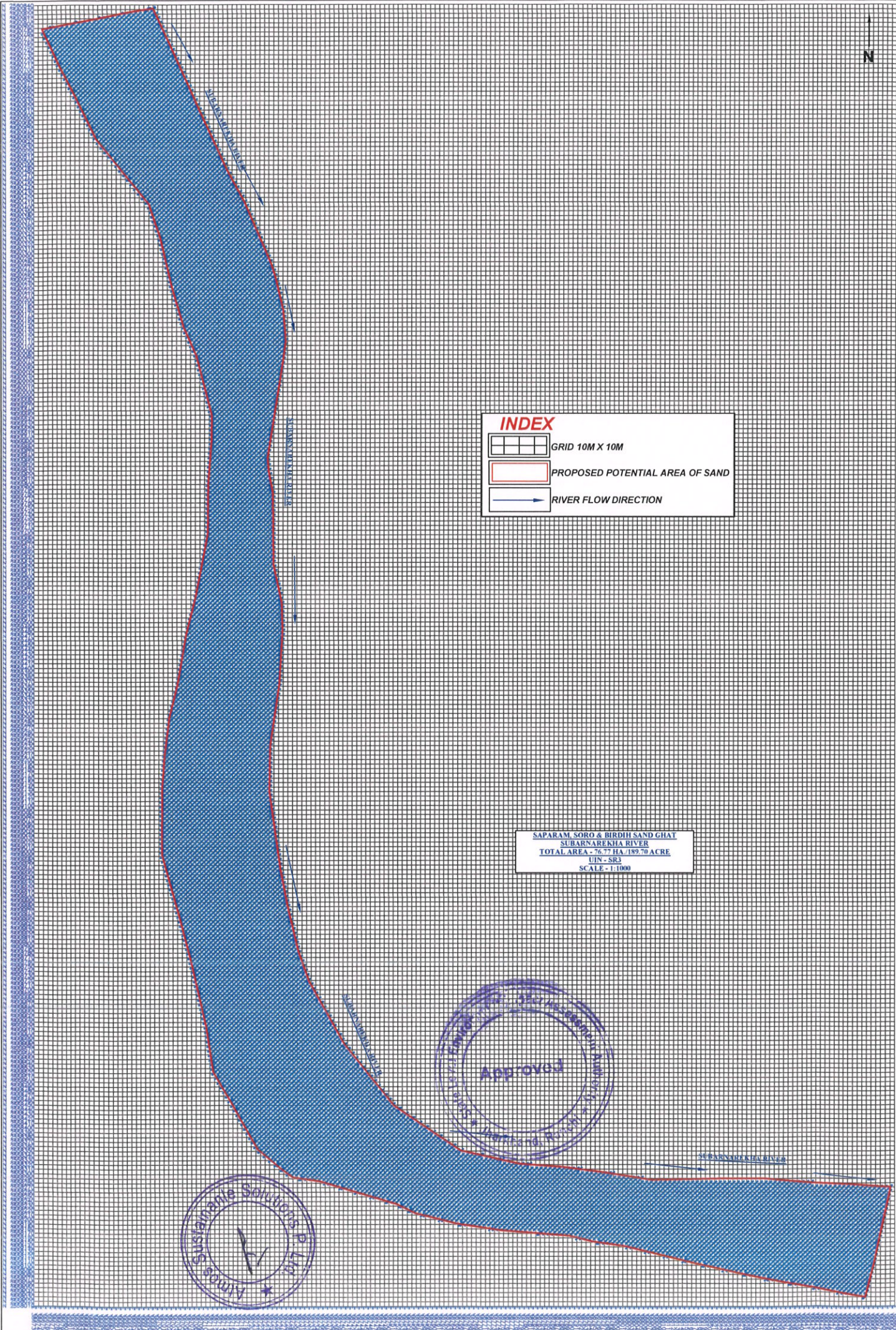





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INDEX
 GRID 10M X 10M
 PROPOSED POTENTIAL AREA OF SAND
 RIVER FLOW DIRECTION

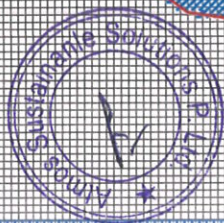
BAMUNDIH GOBINDP R & SAPADA SAND GRAB
 SUBARNARATHA RIVER
 TOTAL AREA - 48.88 HA/2283 ACRE
 1:50,000
 SCALE - 1:1000





INDEX	
	GRID 10M X 10M
	PROPOSED POTENTIAL AREA OF SAND
	RIVER FLOW DIRECTION

SAPARAM, SORO & BIRDIH SAND GHAT
SUBARNAREKHA RIVER
TOTAL AREA - 76.77 HA / 189.70 ACRE
UIN - SR3
SCALE - 1:1000



ANNEXURE-20

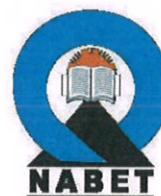
COPY OF ACCREDITED CERTIFICATE





Quality Council of India

National Accreditation Board for Education & Training



Certificate of Accreditation

Atmos Sustainable Solutions Pvt. Ltd.

A-73, 3rd Floor, Sector-65, Noida, Uttar Pradesh-201301

Accredited as Category – 'B' organization under the QCI-NABET Scheme for Accreditation of EIA Consultant Organizations: Version 3 for preparing EIA/EMP reports in the following sectors:

Sl. No	Sector Description	Sector (as per)		Cat.
		NABET	MoEFCC	
1.	Mining of minerals including opencast and underground mining	1	1 (a) (i)	A
2.	River Valley projects	3	1 (c)	A
3.	Industrial estates/ parks/ complexes/areas, export processing Zones (EPZs), Special Economic Zones (SEZs), Biotech Parks, Leather Complexes	31	7 (c)	A
4.	Highways,	34	7 (f)	A
5.	Common Municipal Solid Waste Management Facility (CMSWMF)	37	7 (i)	B
6.	Building and construction projects	38	8 (a)	B
7.	Townships and Area development projects	39	8 (b)	B

Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in IA AC Minutes dated December 4, 2020 on QCI-NABET website.

The Accreditation shall remain in force subject to continued compliance to the terms and conditions mentioned in NABET's letter of accreditation bearing no. QCI/NABET/ENV/ACO/21/1592 dated January 6, 2021. The accreditation needs to be renewed before the expiry date by Atmos Sustainable Solutions Pvt. Ltd., Noida following due process of assessment.

Sr. Director, NABET
Dated: January 6, 2021



Certificate No.
NABET/EIA/2023/IA0063

Valid till
September 8, 2023

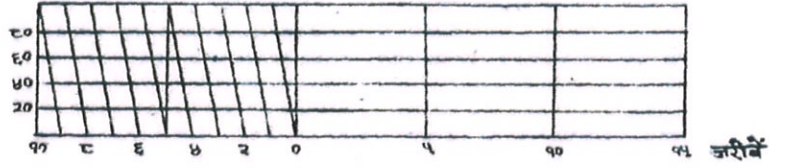
For the updated List of Accredited EIA Consultant Organizations with approved Sectors please refer to QCI-NABET website.



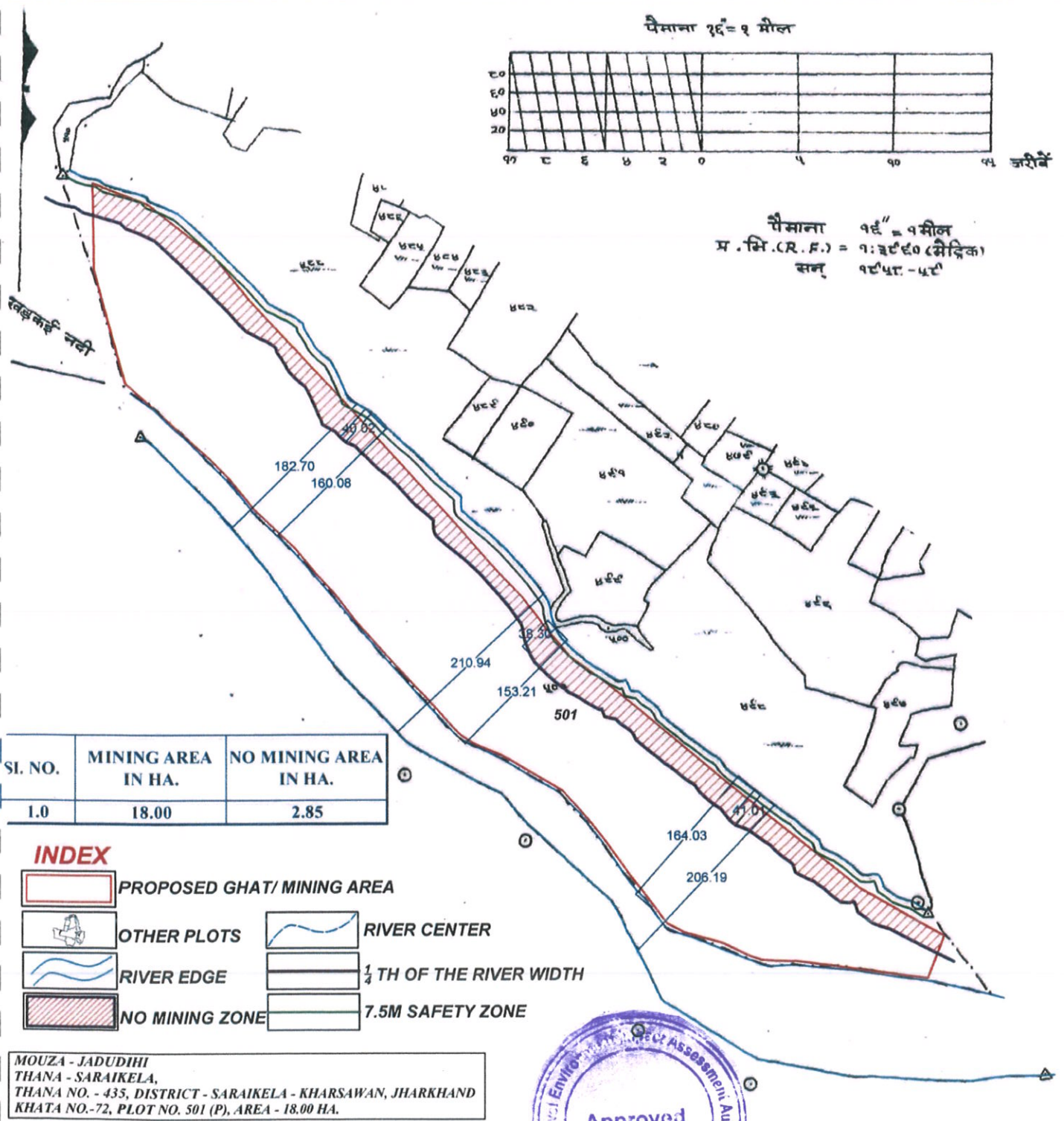
ANNEXURE-21



पैमाना १" = १ मील



पैमाना १" = १ मील
 प्र. भि. (R.F.) = १:३६०० (मैट्रिक)
 सन् १९५८-५९



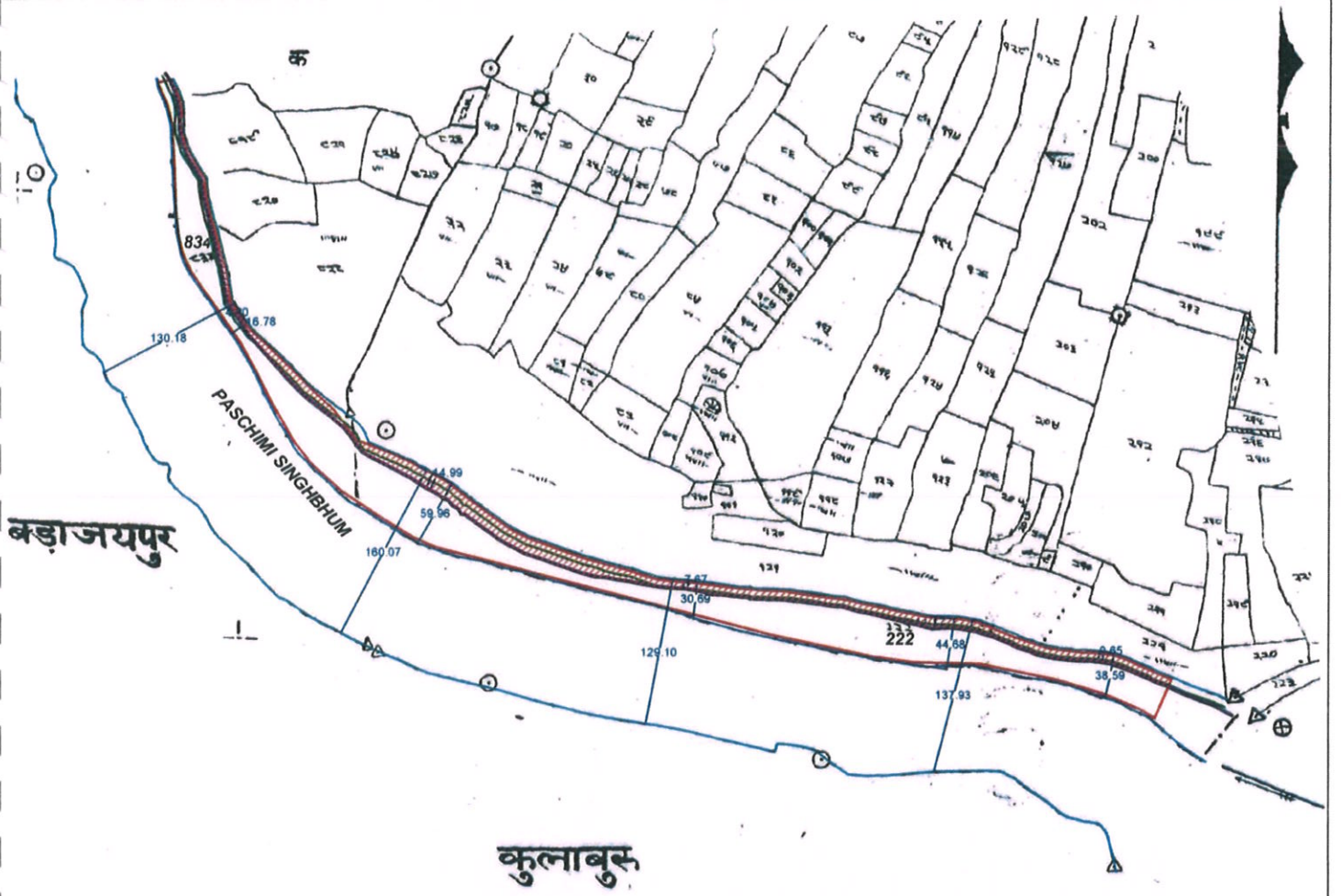
Sl. No.	MINING AREA IN HA.	NO MINING AREA IN HA.
1.0	18.00	2.85

INDEX

- PROPOSED GHAT/ MINING AREA
- RIVER CENTER
- RIVER EDGE
- NO MINING ZONE
- OTHER PLOTS
- 1/4 TH OF THE RIVER WIDTH
- 7.5M SAFETY ZONE

MOUZA - JADUDIHI
 THANA - SARAİKELA,
 THANA NO. - 435, DISTRICT - SARAİKELA - KHARSAWAN, JHARKHAND
 KHATA NO.-72, PLOT NO. 501 (P), AREA - 18.00 HA.





Sarjamdihi. No 441

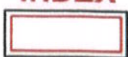






नाममौजा सारजमडीह
 थाना सरायकेला
 थाना नंबर ४४१

पैमाना १इं = १ मील

Sl. NO.	MINING AREA IN HA.	NO MINING AREA IN HA.
1.0	3.68	0.85



INDEX

-  PROPOSED GHAT/ MINING AREA
-  OTHER PLOTS
-  RIVER EDGE
-  NO MINING ZONE
-  RIVER CENTER
-  1/4 TH OF THE RIVER WIDTH
-  7.5M SAFETY ZONE

पैमाना ब हिसाब फी मील १इं इंच



(R.F.) १: ३८६० (मेट्रिक)
 सन १९७८-७९

MOUZA - SARJAMDIHI
 THANA - SARAIKELA,
 THANA NO. - 441, DISTRICT - SARAIKELA - KHARSAWAN, JHARKHAND
 PLOT NO. 222(P) & 834, AREA - 3.68 HA.

Majhigan. No. 447
 नाममौजा मंजगांव
 थाना सरायकेला
 थाना नम्बर ४४७

प्र.मि.न(प्र.न) १=३३६०(मैट्रिक)
 सन् १९४८-४९

BARA-MOUDI

PASHCHIMI SINGHBHUM

BARAMAUDI






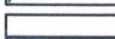

Balidihi. No 448

नाम ग्राम बाली डीह
 थाना सरायकेला
 थाना नं ४४८

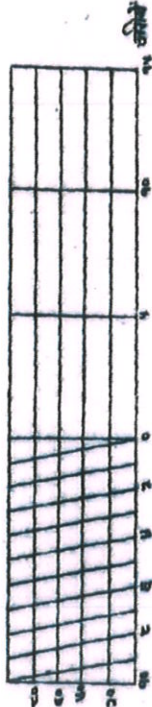


Sl. NO.	MINING AREA IN HA.	NO MINING AREA IN HA.
1.0	10.00	2.18

INDEX

-  PROPOSED GHAT/ MINING AREA
-  OTHER PLOTS
-  RIVER EDGE
-  NO MINING ZONE
-  RIVER CENTER
-  1/4 TH OF THE RIVER WIDTH
-  7.5M SAFETY ZONE

MOUZA - MAJHIGAN
 THANA - SARAİKELA, THANA NO. - 447
 DISTRICT - SARAİKELA - KHARSAWAN, JHARKHAND
 PLOT NO. 260, OR 7260
 MOUZA - BALIDIHI, THANA - SARAİKELA,
 THANA NO. - 448, DISTRICT - SARAİKELA - KHARSAWAN, JHARKHAND
 PLOT NO. 822(P) & 823,
 AREA - 10.00 HA.



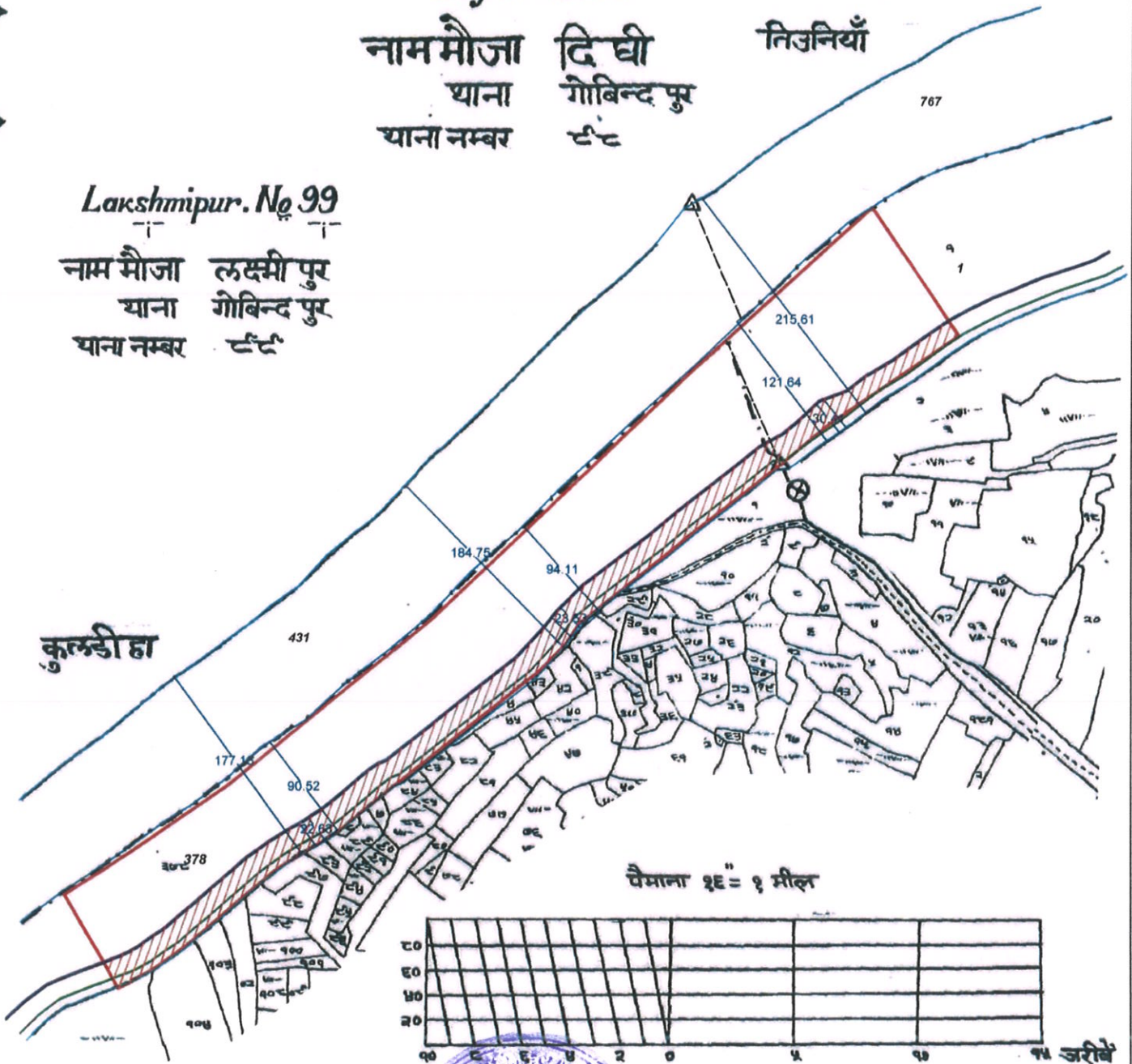
सै.मि.म. = १:५०००

Dighi. No-98

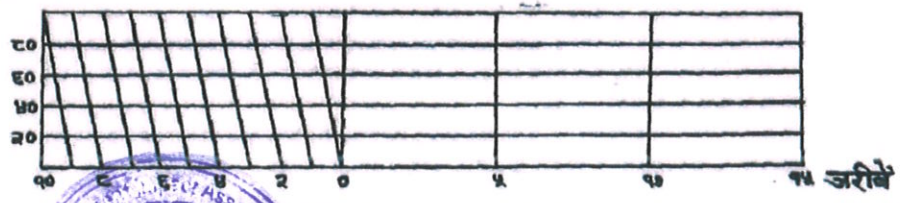
नाममौजा दिघी तिउनियाँ
 थाना गोबिन्दपुर
 थाना नम्बर ८८

Lakshmipur. No 99

नाममौजा लक्ष्मीपुर
 थाना गोबिन्दपुर
 थाना नम्बर ८८

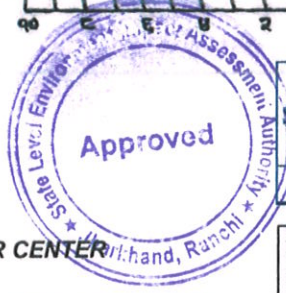


चैमाना ३इ = १ मील



INDEX

- PROPOSED GHAT/ MINING AREA
- OTHER PLOTS
- RIVER CENTER
- RIVER EDGE
- NO MINING ZONE
- 1/4 TH OF THE RIVER WIDTH
- 7.5M SAFETY ZONE

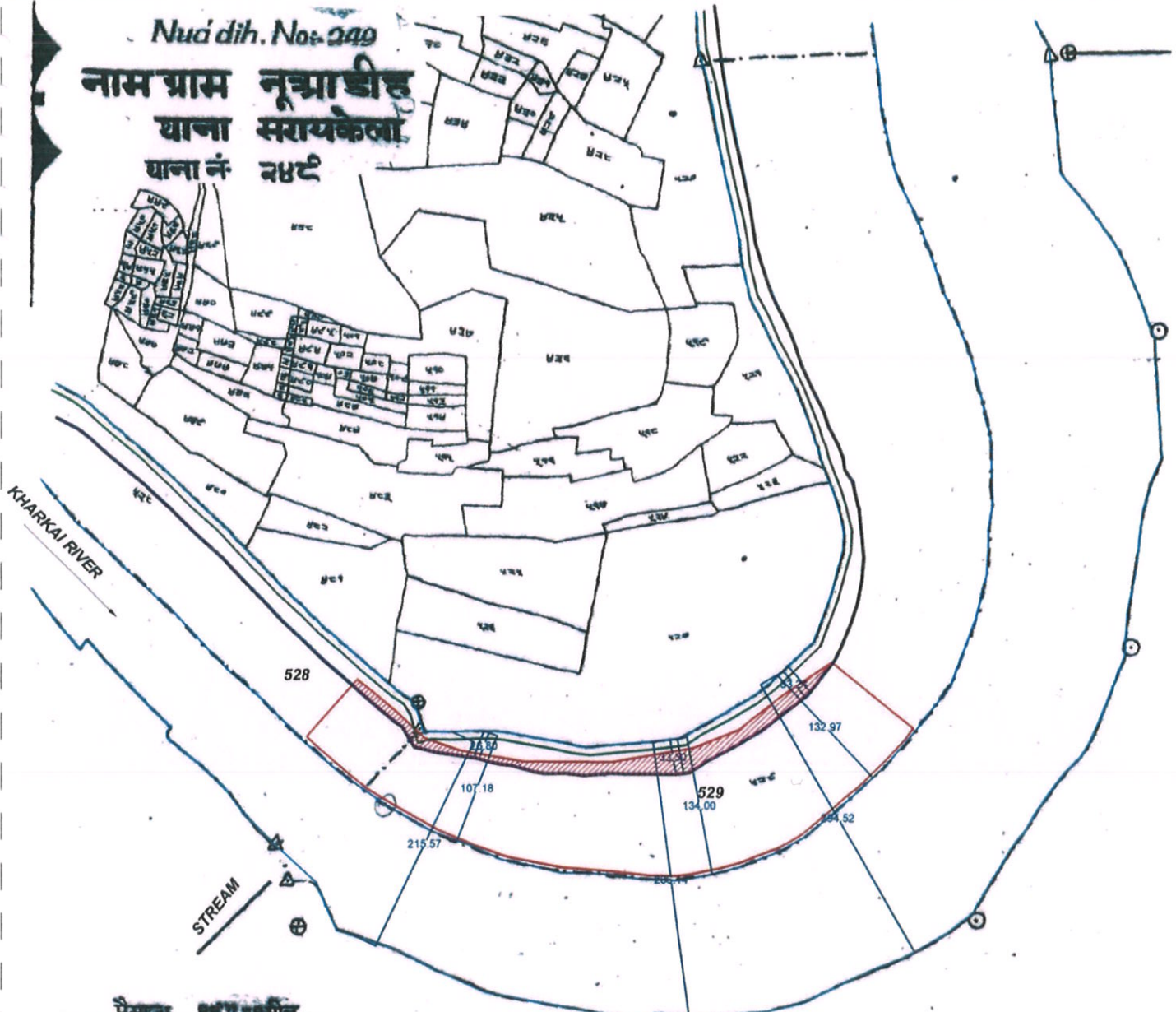


SI. NO.	MINING AREA IN HA.	NO MINING AREA IN HA.
1.0	8.10	1.79

MOUZA - DIGHI
 THANA - GOBINDPUR,
 THANA NO. - 98, DISTRICT - SARAIKELA - KHARSAWAN, JHARKHAND
 PLOT NO. 1(P),
 MOUZA - LAKSHMIPUR, THANA - GOBINDPUR,
 THANA NO. - 99, DISTRICT - SARAIKELA - KHARSAWAN, JHARKHAND
 PLOT NO. 378(P),
 AREA - 8.10 HA.

Nua dih. No- 249

नाम ग्राम नूआडीह
थाना सरायकेला
थाना नं 249



पैमाना १ इंच = १ किलोमीटर
प्र.सि. (स.प्र.) = १:१०,००० (सि.सि.)
अनु. इ.प्र.सि. - प्र.सि.

पैमाना १ इंच = १ मील



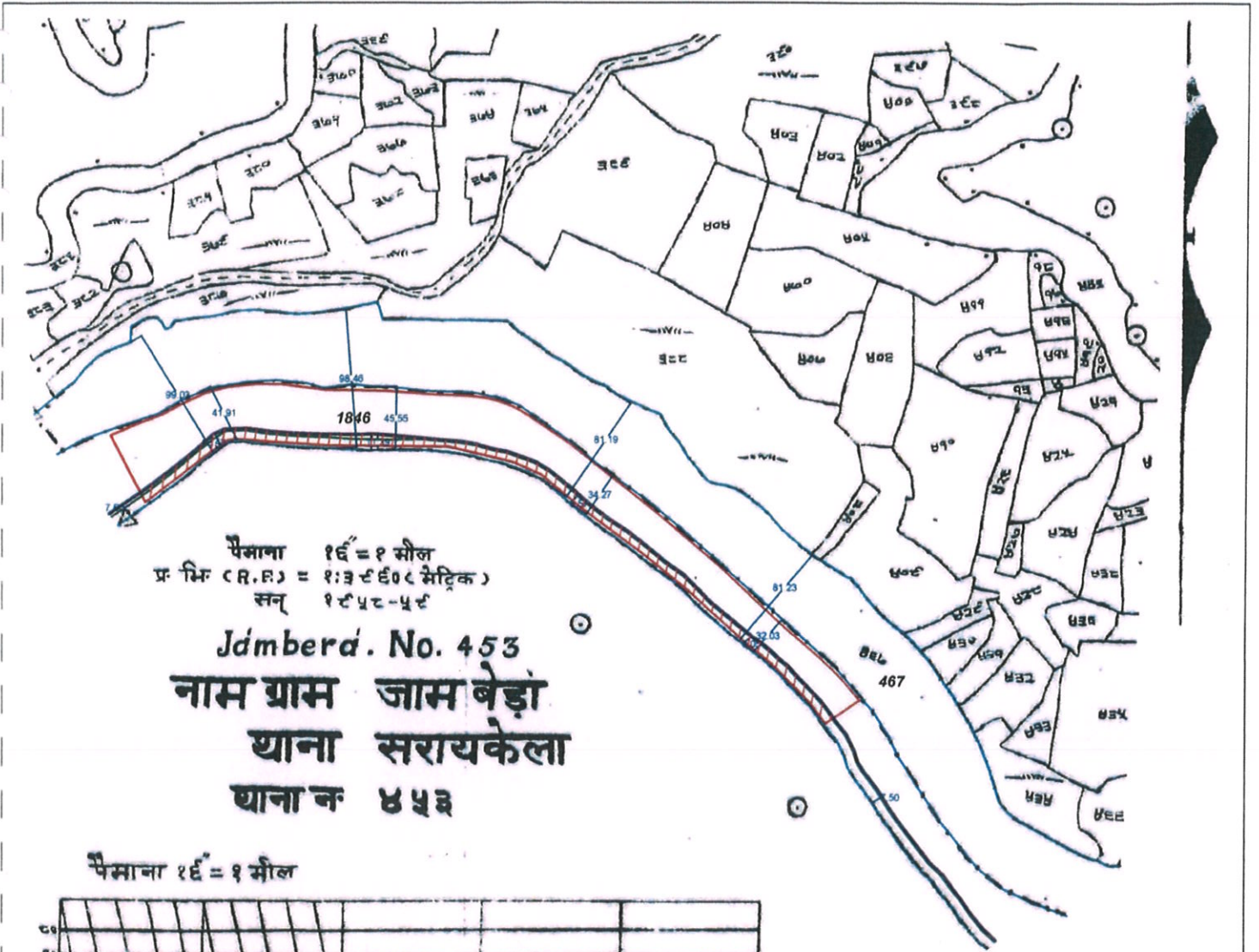
INDEX

	PROPOSED GHAT/ MINING AREA		RIVER CENTER
	OTHER PLOTS		1/4 TH OF THE RIVER WIDTH
	RIVER EDGE		7.5M SAFETY ZONE
	NO MINING ZONE		



SI. NO.	MINING AREA IN HA.	NO MINING AREA IN HA.
1.0	5.70	0.57

MOUZA - NUA DIH
THANA - SARAİKELA,
THANA NO. - 249, DISTRICT - SARAİKELA - KHARSAWAN,
JHARKHAND
PLOT NO. 528(P) & 529(P) AREA - 5.70 HA.



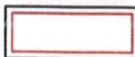

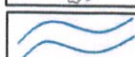




पैमाना १ ई = १ मील
 प्र. भि. (R.F.) = १:३१६०० (मैट्रिक)
 सन् १९५८-५९

Jambera. No. 453
नाम ग्राम जाम बेड़ा
थाना सरायकेला
थाना न ४५३

पैमाना १ ई = १ मील



INDEX

-  PROPOSED GHAT/ MINING AREA
-  OTHER PLOTS
-  RIVER EDGE
-  NO MINING ZONE
-  RIVER CENTER
-  1/4 TH OF THE RIVER WIDTH
-  7.5M SAFETY ZONE

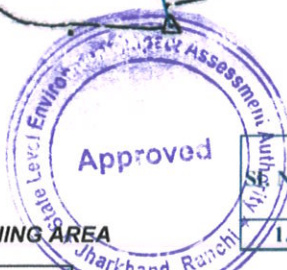
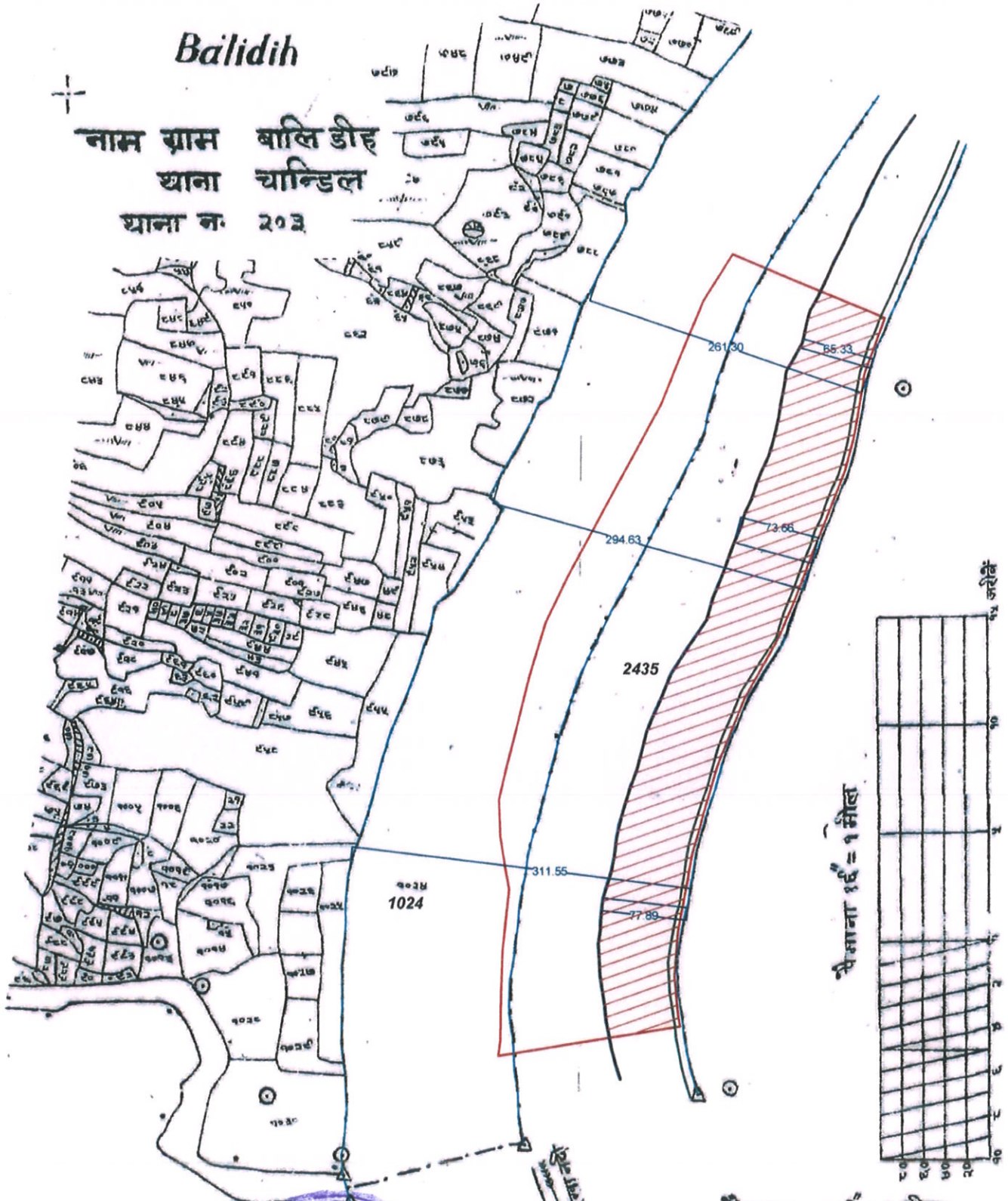
Sl. No.	MINING AREA IN HA.	NO MINING AREA IN HA.
1.0	2.08	0.39

MOUZA - JAMBERA
 THANA - SARAIKELA,
 THANA NO. - 453, DISTRICT - SARAIKELA - KHARSAWAN,
 JHARKHAND
 PLOT NO. 1846(P)/468, AREA - 2.08 HA.








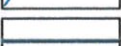
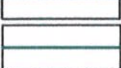
Balidih

नाम ग्राम बालि डीह
थाना चान्डिल
थाना नं. 203



पैमाना १ इंच = १ मील
प्र. भि. (R. F)
सन् १:३६६० (मेट्रिक)
१८५८-५८ ईस्वी

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-  PROPOSED GHAT/ MINING AREA
-  OTHER PLOTS
-  RIVER EDGE
-  NO MINING ZONE
-  RIVER CENTER
-  1/4 TH OF THE RIVER WIDTH
-  7.5M SAFETY ZONE

NO.	MINING AREA IN HA.	NO MINING AREA IN HA.
1.0	12.91	4.86

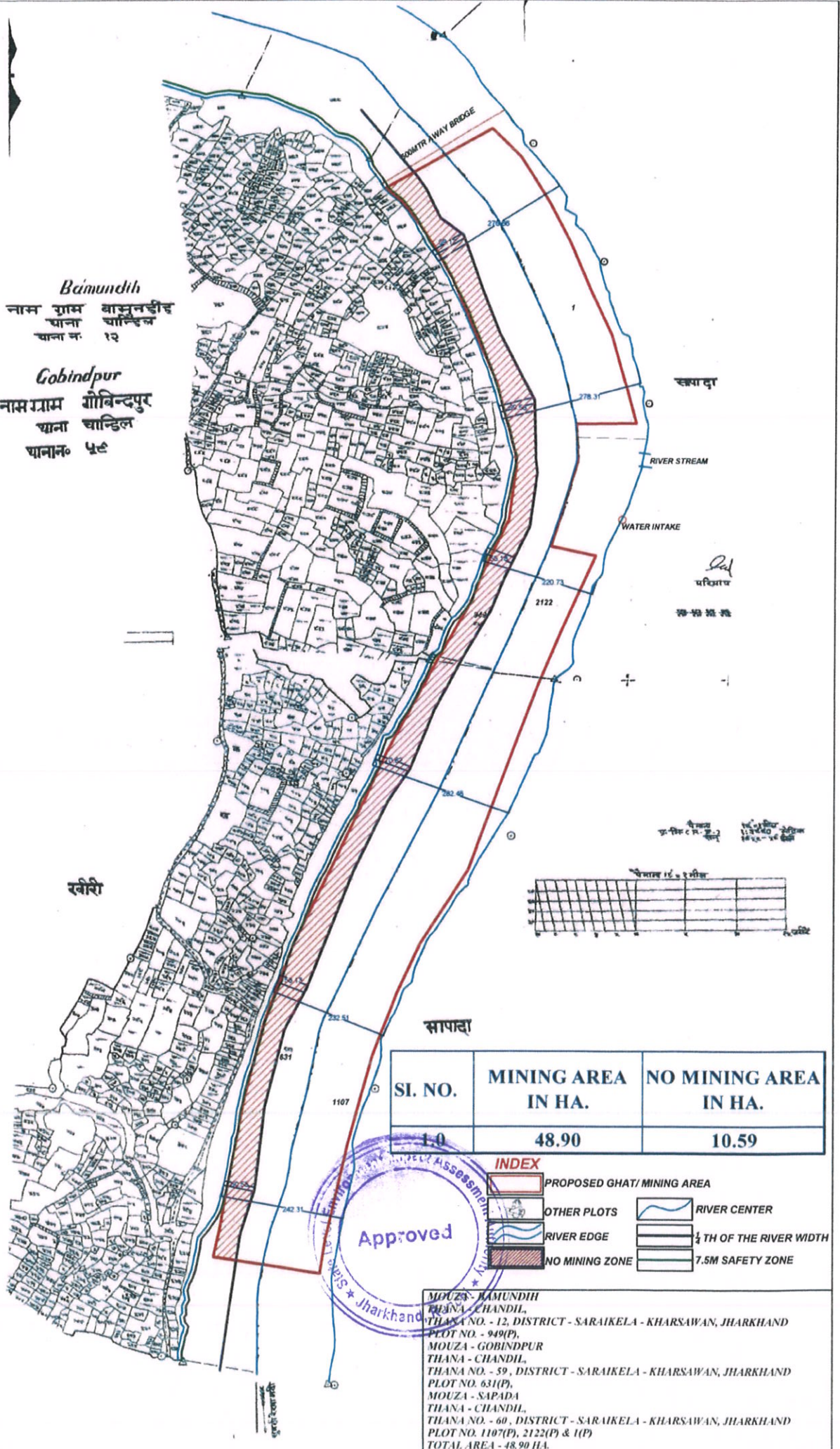
MOUZA - BALIDIH
THANA - CHANDIL,
THANA NO. - 203, DISTRICT - SARAIKELA - KHARSAWAN,
JHARKHAND
PLOT NO. 1024(P) & 2435(P), AREA - 12.91 HA.
As Per C.O Letter- 1024 & 06

Bamundih
 नाम ग्राम बासुनडीह
 थाना चान्दिल
 थाना नं. १२

Gobindpur
 नामग्राम गोविन्दपुर
 थाना चान्दिल
 थाना नं. ५६








खीरी

सापदा



SI. NO.	MINING AREA IN HA.	NO MINING AREA IN HA.
1-0	48.90	10.59

INDEX

-  PROPOSED GHAT/ MINING AREA
-  OTHER PLOTS
-  RIVER CENTER
-  RIVER EDGE
-  NO MINING ZONE
-  1/4 TH OF THE RIVER WIDTH
-  7.5M SAFETY ZONE

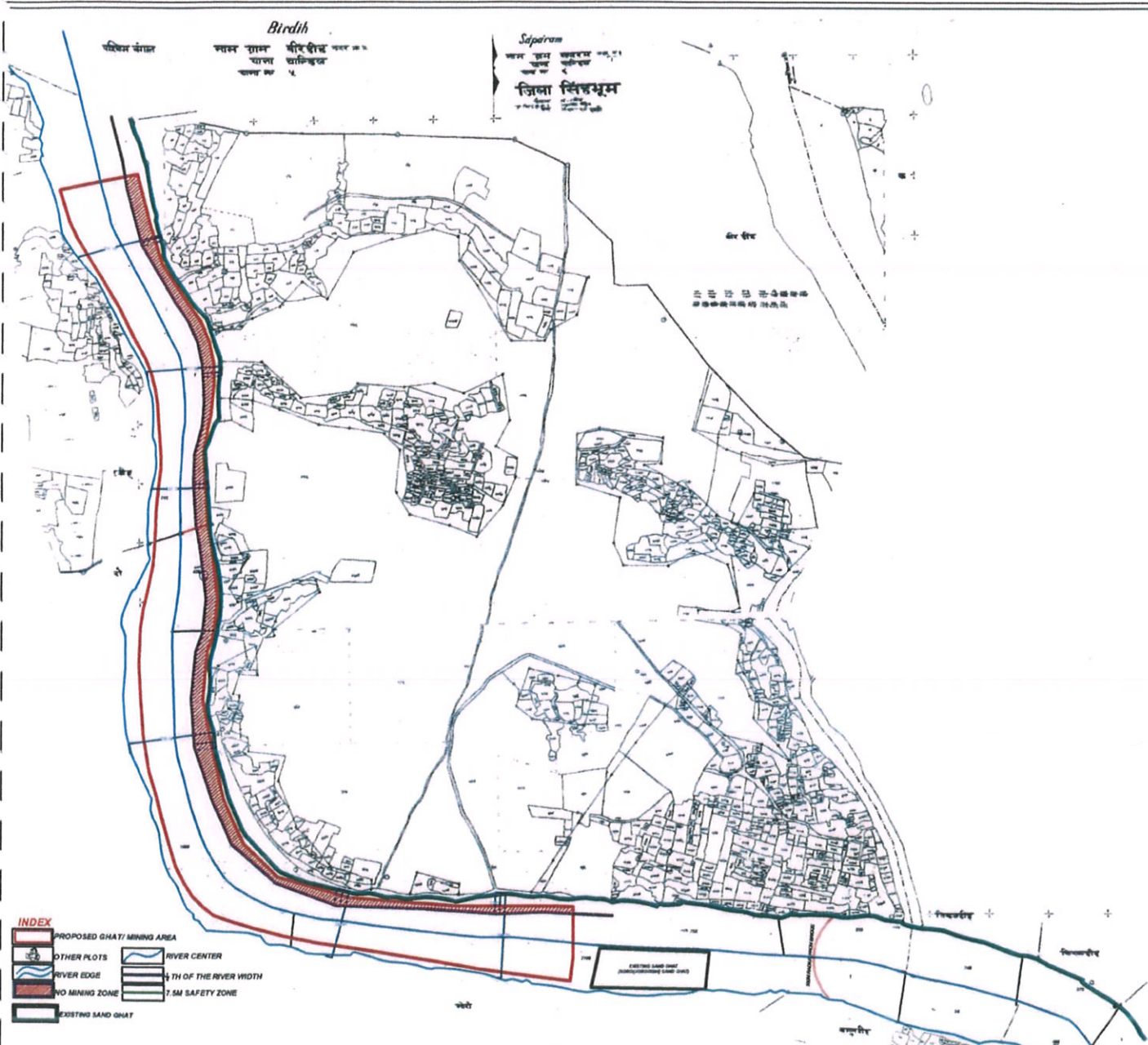
Approved

Jharkhand

MOUZA - BAMUNDIH
 THANA - CHANDIL,
 THANA NO. - 12, DISTRICT - SARAIKELA - KHARSAWAN, JHARKHAND
 PLOT NO. - 949(P)
 MOUZA - GOBINDPUR
 THANA - CHANDIL,
 THANA NO. - 59, DISTRICT - SARAIKELA - KHARSAWAN, JHARKHAND
 PLOT NO. 631(P),
 MOUZA - SAPADA
 THANA - CHANDIL,
 THANA NO. - 60, DISTRICT - SARAIKELA - KHARSAWAN, JHARKHAND
 PLOT NO. 1107(P), 2122(P) & 1(P)
 TOTAL AREA - 48.90 HA.

Birdih
 विधान संसद
 भाग नं. ५
 नाम नगर बीर हीर
 पंचायत समिति
 चण्डिल

Saparam
 नाम नगर सपारम
 पंचायत समिति
 चण्डिल
जिला सिन्धुधाम



INDEX

	PROPOSED GHAT/ MINING AREA		RIVER CENTER
	OTHER PLOTS		1/4 TH OF THE RIVER WIDTH
	RIVER EDGE		7.5M SAFETY ZONE
	NO MINING ZONE		EXISTING SAND GHAT

MOUZA - SAPARAM
 THANA - CHANDIL,
 THANA NO. - 6, DISTRICT - SARAIKELA - KHARSAWAN,
 JHARKHAND
 PLOT NO. 752(P), 855(P), 429(P) & 1(P)
 MOUZA - SORO
 THANA - CHANDIL,
 THANA NO. - 3, DISTRICT - SARAIKELA - KHARSAWAN,
 JHARKHAND
 PLOT NO. 2106(P) & 1669(P),
 MOUZA - BIRDIH,
 THANA - CHANDIL,
 THANA NO. - 5, DISTRICT - SARAIKELA - KHARSAWAN,
 JHARKHAND
 PLOT NO. 741(P),
TOTAL AREA - 76.77 HA.

SI. NO.	MINING AREA IN HA.	NO MINING AREA IN HA.
1.0	76.77	11.79



PLOTTING SCALE - 1:1000

To
 The Member Secretary
 State Level Expert Appraisal Committee(SEAC),
 Nursery Complex, Near Dhurwa Bus Stand,
 Dhurwa, Ranchi, Jharkhand.

Subject: Compliance regarding Final DSR(Sand) of Saraikela-Kharsawan District

Respected Sir,

With reference to the subject cited above, DSR Sand for Saraikela-Kharsawan District has been submitted to your office Vide letter No.-167/Khanan, Dated-13/03/2023, which has been reviewed in 102nd meeting of SEAC, Jharkhand on 21.03.2023. I am authorised to attend the above meeting vide letter No.-181/M, Dated-20/03/2023 of Deputy Commissioner. Compliance on observation of SEAC are as follow.

S.NO	SEAC OBSERVATION	COMPLIANCE
1.	Detail of production of Sand or Bajri or Minor minerals in last five years.	Production of Sand Complied in Page No.-51
2.	Demand and Supply of the river bed material through market survey needs to be carried out.	Demand and Supply of sand are complied in Page No.-58
3.	Any Comment/Suggestion NIC web portal?	Proposed sand ghats has been advertised in newspaper and district NIC web portal for objection/suggestion from public. But no objection/suggestion have been received. Complied Page No.-74.
4.	List of Category-I detailed properly in tabulated format and given all information.	Already given Category-I in Page No.-75
5.	The sand ghats/leases have not to proposed on the confluence/meanders/concavities/active channels of the river.	All sand ghats are avoid near confluence/meanders/concavities/active channels of the river, ghats images are enclosed in Annexure-13
6.	Process of Deposition of sediments in the river of the district	Process of Deposition of sediments complied Page No.-118 to 119
7.	The proposed leases/ ghats should meet all the siting criteria of the State Pollution Control Board/SEIAA.	All sand ghats are prepared as per the guidelines of SPCB/SEIAA, Jharkhand. NH-100 Mtr

[Handwritten Signature]

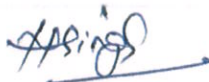


		SH-100Mtr Dist. Metal Road-50Mtr Habitation-200Mtr(CO Letter are Enclosed in Annexure-1) Report from concerned circle officer and DFO has been procured in prescribed format for all proposed sand ghats and attached as Annexure-1 & 2
8.	Sand sample analysis determining the bulk density of proposed sand ghats in the DSR sand.	Bulk Density report of sand from NABL Lab are complied in Annexure-16
9.	Average length and width of the river should be included and mining should be restricted to 3/4 th of the river width and mining should be restricted within 60% of the mineable reserve.	Complied in Annexure-21
10.	Point no.-9.3 of the EMGSM guidelines, 2020 regarding monitoring of the mining near inter-district or inter-state boundary should be addressed in the final DSR, if applicable.	With reference to the C.O report of Rajnagar, Saraikela & Chandil (enclosed as Annexure-1), it is verified that all the identified ghats of Saraikela-Kharsawa District are not crossing any inter-district or inter-state boundary.

Therefore, you are requested for kind consideration and necessary action.

Thanking You

Sincerely



**District Mining Officer
Saraikela-Kharsawa**



**Asst. Director Geology
Saraikela-Kharsawa**

