सत्यमेव जयते

राज्य स्तरीय पर्यावरण समाघात निर्धारण प्राधिकरण, झारखण्ड

State Level Environment Impact Assessment Authority, Jharkhand

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पत्रांकः– 08 दिनांकः– 02.04.2023

प्रेषकः

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

सेवा में,

उपायुक्त,
जिला : धनबाद।

विषय : धनबाद जिला का बालू खनिज से संबंधित DSR के अनुमोदन के संबंध में।

प्रसंग : आपका कार्यालय का पत्रांक–328 / खनन, दि0–03.03.2023।

महाशय,

उपर्युक्त विषयक आपके कार्यालय के प्रासंगिक पत्र दिनांक 03.03.2023 द्वारा धनबाद जिला का बालू खनिज से संबंधित DSR की एक प्रति अनुमोदन हेतु दिनांक 10.03.2023 को SEIAA कार्यालय में समर्पित किया गया।

तद्अनुसार SEAC, झारखण्ड की 102वीं बैठक दिनांक 21.03.2023 से दिनांक 25.03.2023 में Shri Mihir Salkar, DMO, Dhanbad and Mrs. Reena Kumari Oreya, Assistant Director, Geology, Bokaro & Dhanbad 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 30.12.2022. 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.

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 Dhanbad को अनुमोदन हेतु भेजी गयी अनुशंसा के आलोक में SEIAA, झारखण्ड की 103वी 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 धनबाद जिला का बालू खनिज से संबंधित DSR का अनुमोदन किया गया।

धनबाद 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,

04/04/2023

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

DISTRICT SURVEY REPORT

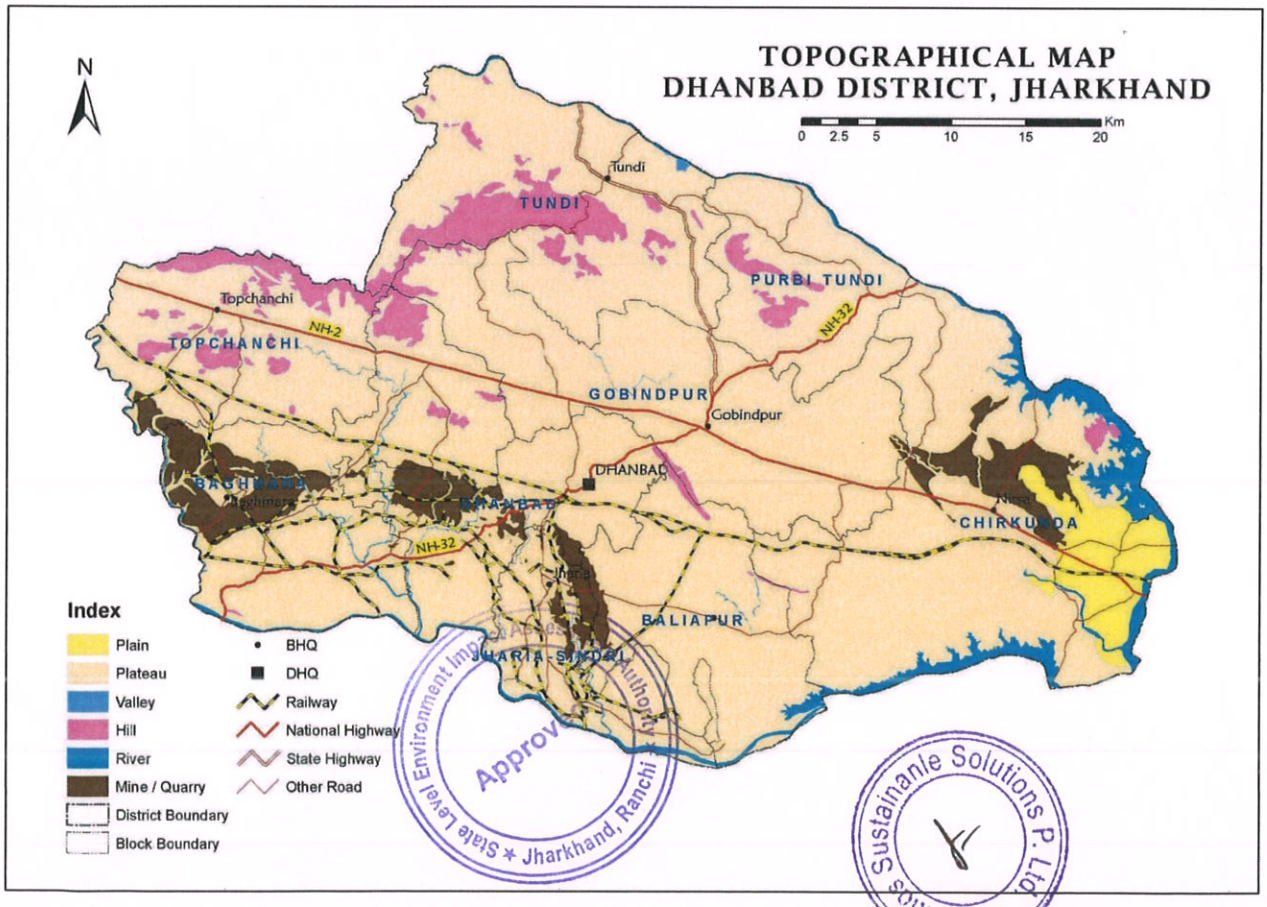
OF

RIVER BED SAND MINING WITH POTENTIAL AREA

FOR

DHANBAD 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), Dhanbad 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 will be 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.

State Level Environment Impact Assessment Authority * Jharkhand, Ranchi * Approved

Reviewed By:

Deputy Commissioner
Dhanbad
Date:

Approved By:

Member Secretary
State Level Environment Impact Assessment Authority, Ranchi, Jharkhand

Member Secretary
State Level Environment Impact Assessment Authority
Jharkhand

Member
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 Dhanbad	03.03.23
Sate Pollution Control Board or Member Dhanbad	03/03/2023
Assistant Director, Geology BOKARO	सहायक निदेशक, भूतत्व जिला भूतात्विक कार्यालय बोकारो
District Mining Officer Dhanbad	03.03.23
Divisional Forest Officer Dhanbad	03/3/23.
Sub-Divisional Magistrate Dhanbad	3/3/23
Deputy Commissioner Dhanbad	3/3/23

State Level Environment Impact Assessment Authority
Approved
Jharkhand, Ranchi

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 in its endeavour to prepare 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 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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16	Test Report of sand from NABL Accredited agency
17	Copy of Work Order
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DISTRICT SURVEY REPORT OF DHANBAD 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
- MoEFCC, 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,

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:

Dhanbad district was constituted in 1956 by carving out the old Dhanbad subdivision, Chas and Chandankiyari police stations of the Sadar subdivision of the erstwhile Manbhum district. Dhanbad is Police district since 1928. The re-organisation of the districts in the State of Bihar which took place after 1971 did not affect the district of Dhanbad. In 1991 a part of Dhanbad district was sliced away to form Bokaro district.

Dhanbad district lies in the mid eastern part of Jharkhand state. Giridih bound it in the north, Bokaro in the west, Purulia district in the south and Jamtara district in the east. It is connected through NH-2 and NH-32 from state capital and different district headquarters of the state. The district has total area of 2074 sq. km. and is located between 23^0 26'- 24^0 01' North latitude to 86^0 10'- 86^0 48' East longitude. Area is included in toposheet no 73I/1, 73I/2, 73I/5, 73I/6, 73I/7 73I/9, 73I/10, 73I/13 and 73I/14 of survey of India (1:50000 scale).

1.2 Administrative Setup:

Dhanbad district lies in the mid-eastern part of Jharkhand state. Giridih bound it in the north, Bokaro in the west, Purulia district in the south and Jamtara district in the east. It is connected through NH-2 and NH-32 from state capital and different district headquarters of the state.

Table no.1.1: List of adminisrative and development units:

Administrative / Developmental Units	Total No.	Names
Districts	1 (One)	Dhanbad
Sub-Divisions	1 (One)	Dhanbad
Block	10 (Ten)	Dhanbad, Baghmara, Nirsa, Topchanchi, Tundi, Purbi Tundi, Govindpur, Baliapur, Egarkund and Kaliasole

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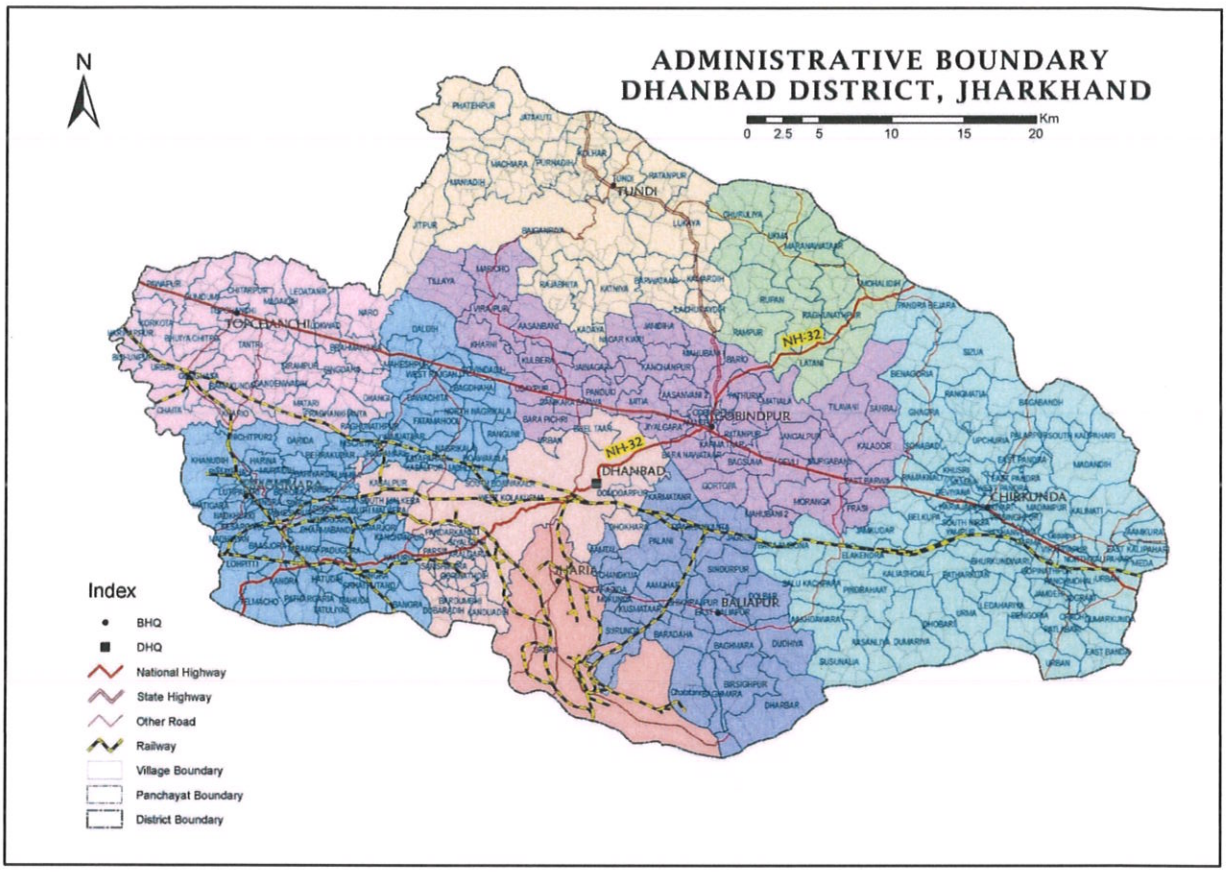
Administrative / Developmental Units	**Total No.**	**Names**
Village	1209 (As per 2001 Census)	
Revenue Inspector Circle	9 (Nine)	Dhanbad, Jharia, Baghmara, Nirsa, Topchanchi, Tundi, Purbi Tundi, Govindpur and Baliapur
Panchayat	383 (As per old gazatteer) 256(As per new gazatteer)	
Dhanbad Municipal Corporation	1 (One)	Dhanbad Municipal Corporatio



Source: Jharkhand Space Application Centre

Figure no. 1.1, Administrative boundary of Dhanbad District

1.3 Connectivity:

In recent years Dhanbad well known as 'The Coal Capital of India' has emerged as one of the fastest growing cities in the country. Major industrial establishments and commercial activities have made this city a major commercial hub in eastern India. In the last few years the city has seen lot of developmental work resulting in its rapid expansion. The city has also progressed in terms of transportation network with upgradation of city roads connecting it to state and national highways. The city is well connected to various parts of the country via roadways and railways.

Road network in Dhanbad:

Dhanbad is well connected through road network with all major cities in India. Most favorable thing for Dhanbad is two major highways passing through it which provide perfect road connectivity with other cities. One of these major highways is National Highway 2, also known as Golden Quadrilateral (GQ), that starts from Kolkata and ends at Delhi. Other one is National Highway 32 which starts from Govindpur and runs through Bakaro-Jamsedpur-Barbil providing proper road connectivity to this city. Dhanbad is located just off the Golden Quadrilateral (GQ)

which is also popular as National Highway 2 or NH2. Dhanbad is connected with Ramgarh via Chas and Bokaro Steel City and with Ranchi via Chas and Muri. Being bestowed with good road networks, Dhanbad easily manages to connect with major places in the country.

Railways in Dhanbad:

Dhanbad junction is one of the busiest junction in Jharkhand and witness influx of passengers throughout the year. It is well connected with all states through rail network. Dhanbad Rail Division comes under East Central Railway Zone of India and it is famous for being second highest revenue generating rail division in India. It is enough to describe its perfect rail services. All major cities of India like Delhi, Mumbai, Kolkata, Chennai, Ahmedabad, Bhopal, Hyderabad, Gwalior, Kochi, Indore, Jaipur, Jodhpur, Jabalpur, Nagpur etc. are well connected with Dhanbad through extensive rail network.

Source: www.mapsofindia.com

Figure no. 1.2, Railway map of Dhanbad District

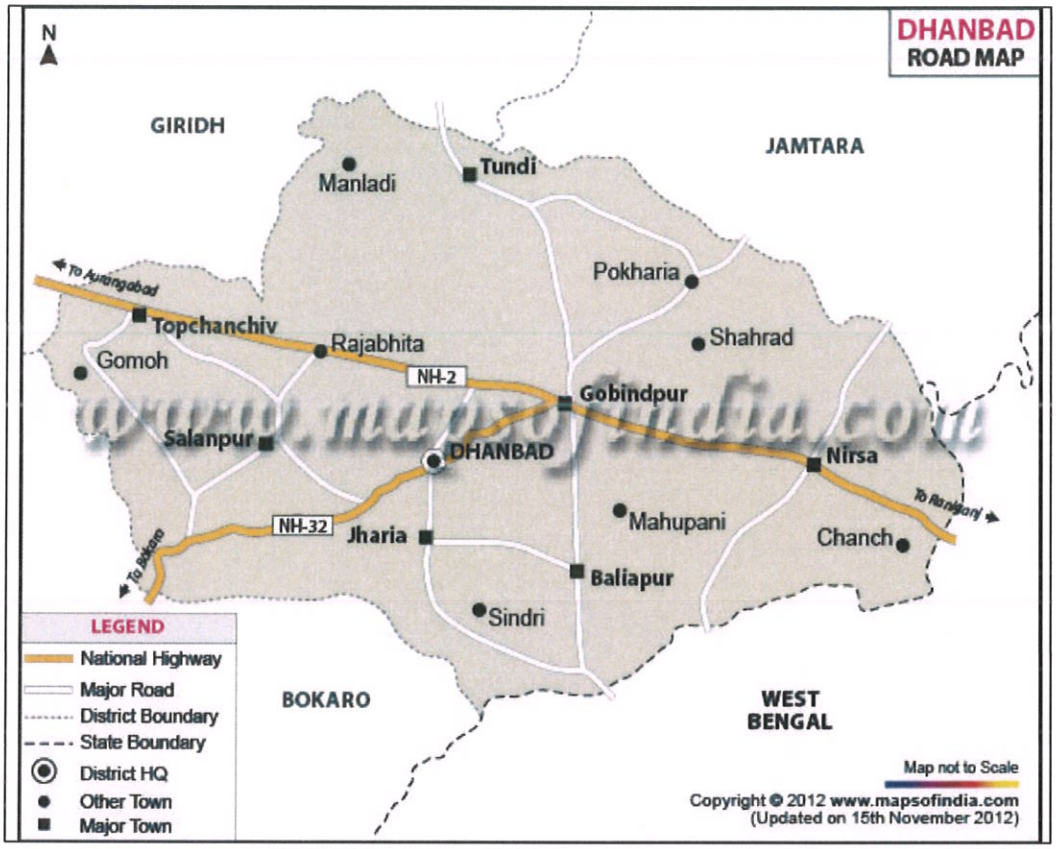


Figure no. 1.3, Road map of Dhanbad District

Source: www.mapofindia.com

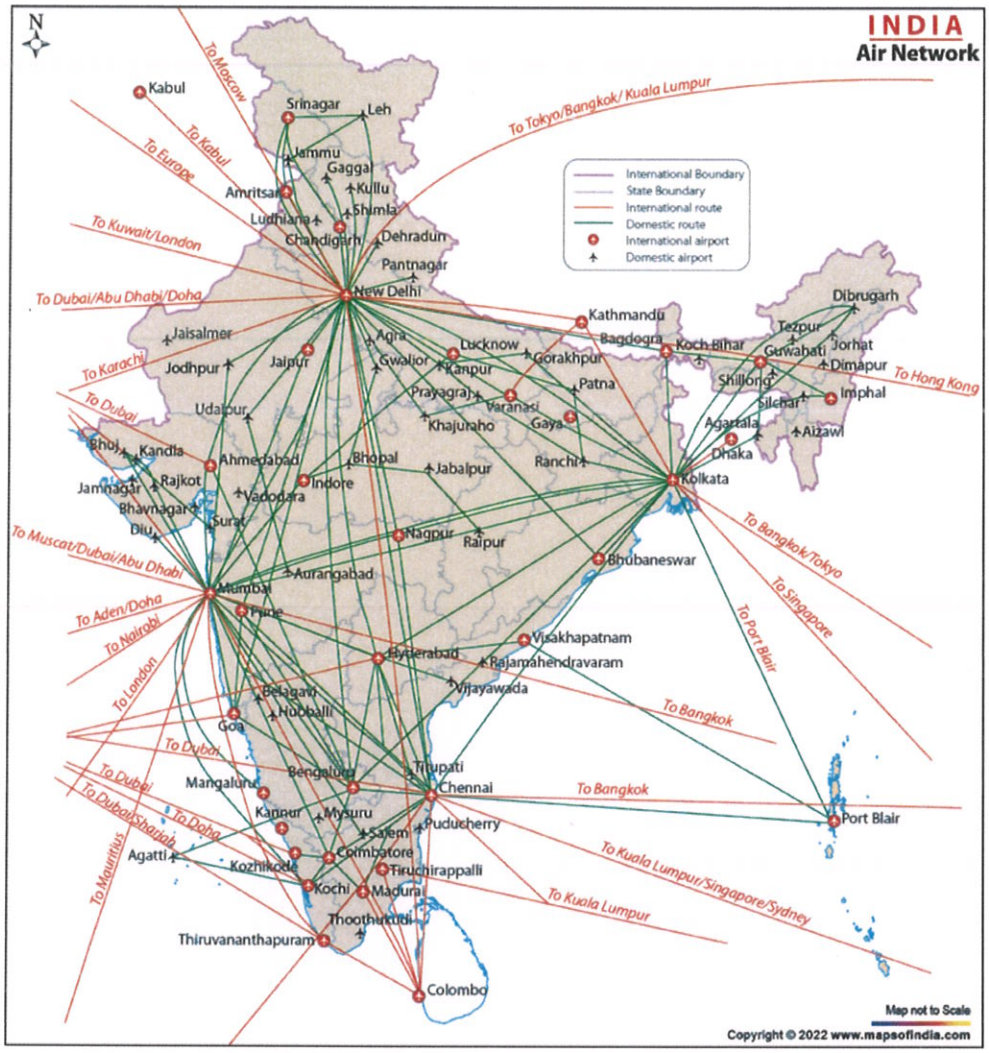


Figure no. 1.4, Air Network of India

Source: ***www.mapofindia.com***

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CHAPTER- 02
OVERVIEW OF MINING ACTIVITY IN THE DISTRICT

General Information:

Dhanbad district was constituted in 1956 by carving out the old Dhanbad subdivision, Chas and Chandankiyari police stations of the Sadar subdivision of the erstwhile Manbhum district. Dhanbad is Police district since 1928. The re-organisation of the districts in the State of Bihar which took place after 1971 did not affect the district of Dhanbad. In 1991 a part of Dhanbad district was sliced away to form Bokaro district.

Dhanbad district lies in the mid eastern part of Jharkhand state. Giridih bound it in the north, Bokaro in the west, Purulia district in the south and Jamtara district in the east. It is connected through NH-2 and NH-32 from state capital and different district headquarters of the state. The district has total area of 2074 sq. km

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

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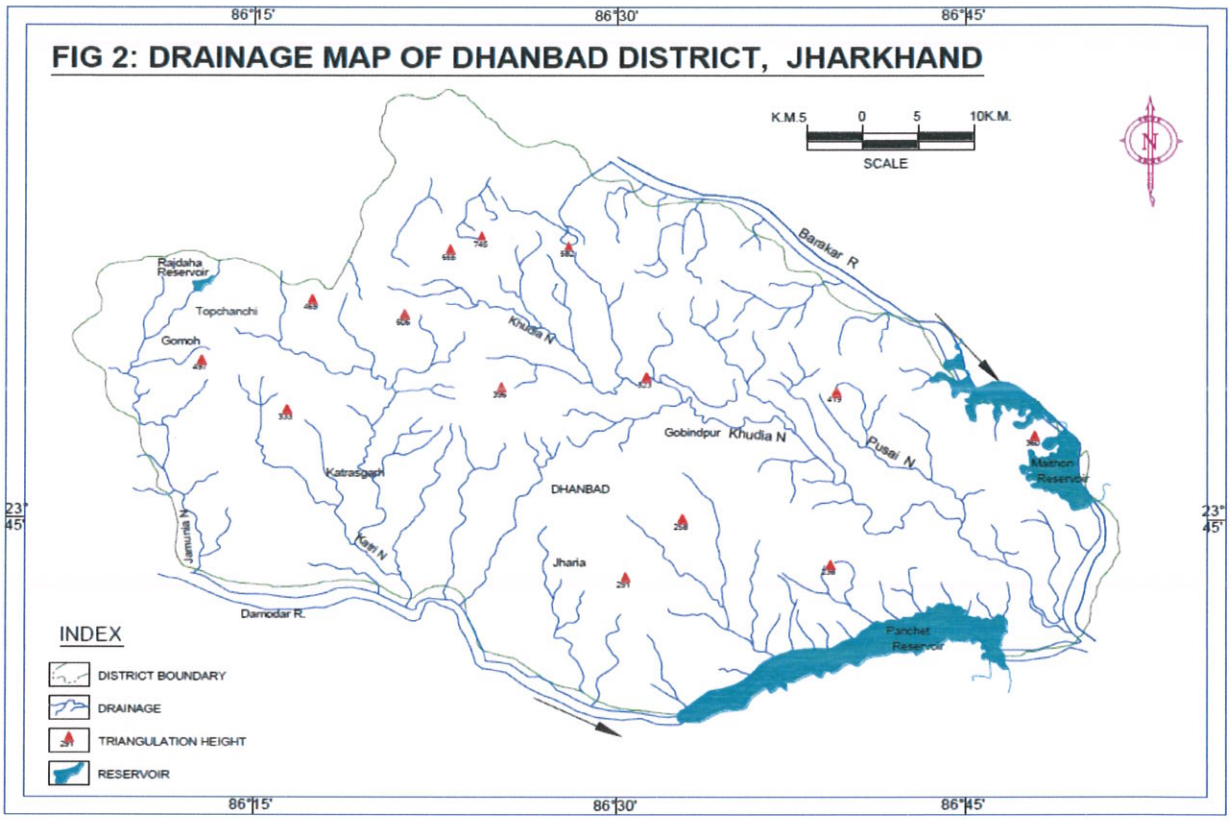
Main Objectives of Sustainable Sand Mining:

- 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.



Source:CGWB

Figure no. 2.1, Drainage map

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CHAPTER- 03
GENERAL PROFILE OF THE DISTRICT

Dhanbad district was constituted in 1956 by carving out the old Dhanbad subdivision, Chas and Chandankiyari police stations of the Sadar subdivision of the erstwhile Manbhum district. Dhanbad is Police district since 1928. The re-organisation of the districts in the State of Bihar which took place after 1971 did not affect the district of Dhanbad. In 1991 a part of Dhanbad district was sliced away to form Bokaro district.

Dhanbad district lies in the mid eastern part of Jharkhand state. Giridih bound it in the north, Bokaro in the west, Purulia district in the south and Jamtara district in the east. It is connected through NH-2 and NH-32 from state capital and different district headquarters of the state. The district has total area of 2074 sq. km. and is located between 23^0 26'- 24^0 01' North latitude to 86^0 10'- 86^0 48' East longitude. Area is included in toposheet no 73I/1, 73I/2, 73I/5, 73I/6, 73I/7 73I/9, 73I/10, 73I/13 and 73I/14 of survey of India (1:50000 scale). The Dhanbad district consist of 8 blocks of Dhanbad district namely Baghmara, Baliapur, Dhanbad, Govindpur, Jharia, Nirsa, Topchanchi & Tundi. The total population of the Dhanbad district as per the 2011 census is 26,82,662. The density of population is 1316 person per sq. Km. The decadal growth of population is 11.91% (2001-11).

NATURAL DIVISIONS

The district can be divided into three broad natural divisions, viz.,

I. the north and north western portions consisting of the hilly region,
II. the uplands containing coal mines and most of the industries and
III. the remaining uplands and plains lying to the south of the Damodar river consisting of cultivable flat lands.

The north and north western division is separated for the entire length by the Grand trunk road.

In the western middle part of the district are the Dhangi hills, situated in the strip falling between the Grand trunk road in the north and the Grand chord line of the Eastern Rly. In the south, these hills extend from Pradhankhanta to Govindpur, reaching a maximum altitude of 1,256 feet at Dhangi. Further north, a branch of the Parasnath hill runs through Topchanchi and Tundi, the highest point of 1,500 feet being reached at Lalki. The southern part of the district is largely comprised of undulating land. The general slope is from west to east, the direction followed by the two major rivers, Damodar and Barakar.

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RIVERS

The Damodar is the most important river of the Chotanagpur plateau. It rises in Palamu and flows eastward between the plateaus of Ranchi and Hazaribag. It is joined by the Bokaro, the Konar and the Barakar rivers. The Damodar enters Dhanbad district at its confluence with the Jamuria, a stream which marks the western boundary of Dhanbad with Hazaribagh District. Further east, the Damodar is joined by the Katri River which rises in the foot hills below Parasnath and traverses through the Coal-field Area. The Damodar flows for about 77 Km. through the district being joined by the Barakar at its eastern border near Chirkunda. The Panchet dam extending to roughly 6 Kms. is built on river Damodar. The hydel station there generates 40,000 K.W. per hour.

The Barakar, which forms the northern boundary of the district, traverses about 77 Kms. In the district. It flows in south westerly direction up to Durgapur and then south till it joins the Damodar near Chirkuda. The Maithon dam is located on this river about 13 Kms. off its confluence with the Damodar. Attached to it is the Maithan Power Station with a generating capacity of 60,000 K.W.H. Among other small rivers in the district are Gobai, the Irji, the Khudia besides the river Katri.

A location map of Dhanbad District is furnished as Figure No. 3.1.

A Block map of Dhanbad District is furnished as Figure No.3.2

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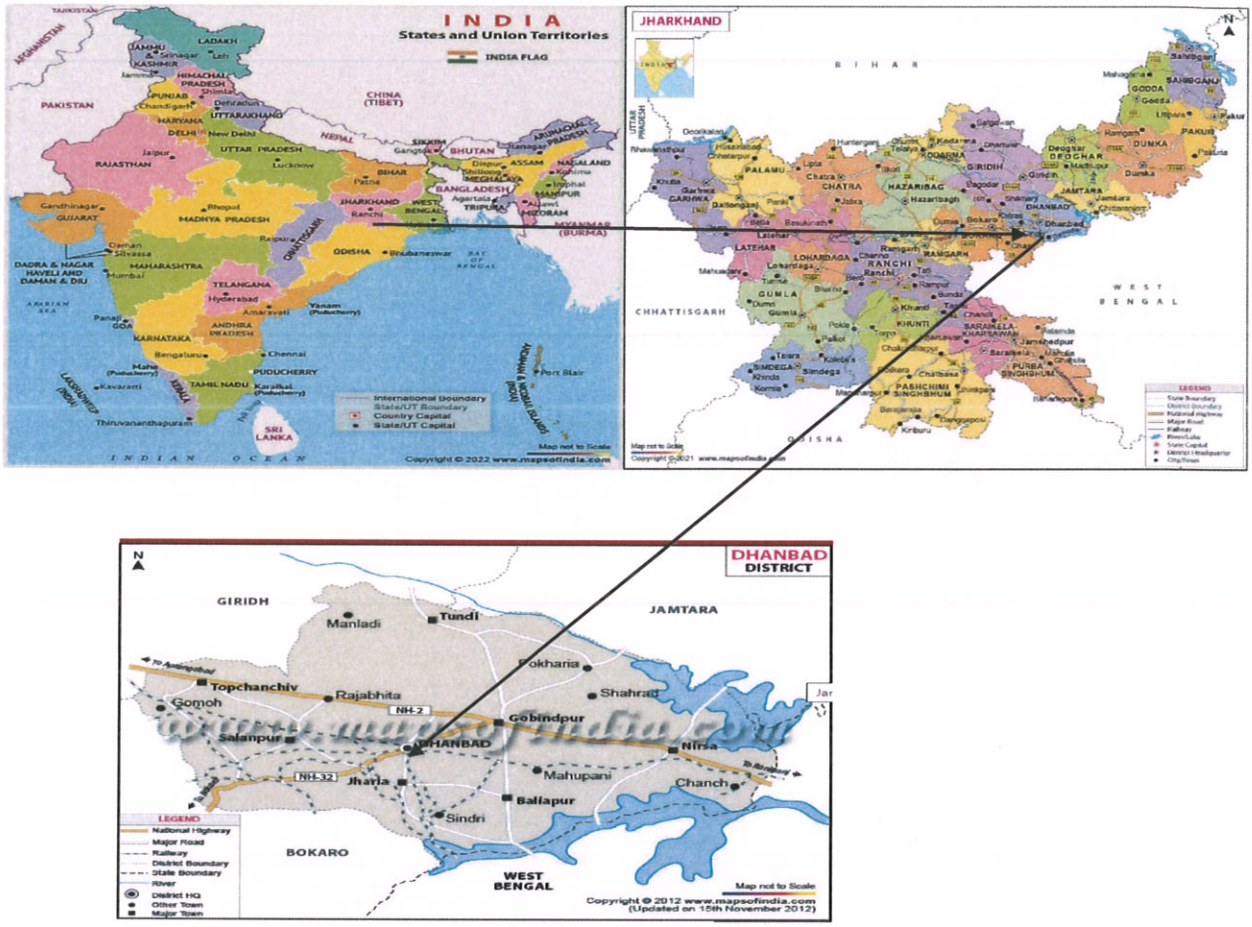

Figure No.3.1: Location map of Dhanbad district, Jharkhand

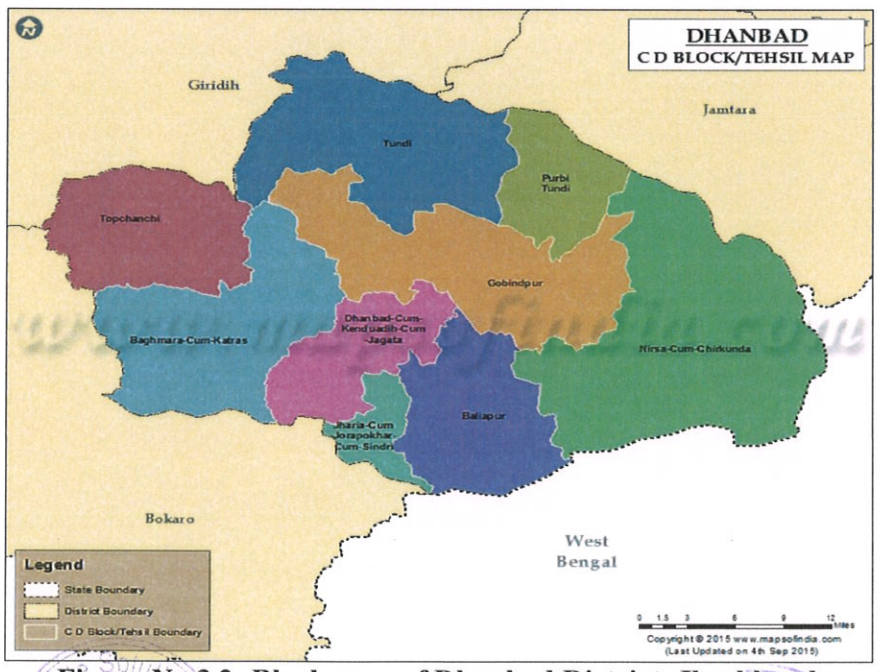

Figure No.3.2: Block map of Dhanbad District, Jharkhand

GEOMORPHOLOGY & SOIL OF THE DISTRICT

Physiography —

The northern part of the study area is covered with hills and thick forest. In general the altitude varies from 133m amsl in Chirkunda to 745m amsl in Parasnath hills. The study area can be divided into two parts.

1) Northwestern hill ranges of Parasnath having parts of Topchanchi, Tundi blocks. These regions have general slope towards south.

2) Areas covered by Damodar and its Tributaries like Barakar. The area comprises of coalfield areas and alluvial tracts.

The main geomorphic features and landforms in the district are as follows:

(1) Alluvial Plains: - These are found near the river tracts and consist of gravels, sands, silt, clay etc.

(2) Structural ridges: - These are linear or arcuate hills showing definite trend lines and covered with thick forests developed over metamorphic rocks. Found in Tundi and northern part of Topchanchi area.

(3) Pediplain (PM):- These are developed over granite gneiss and Meta sediments. High frequencies of lineaments are found. These are found in Govindpur block and parts of Tundi block.

(4) PPS (Pediplain): These are developed over sedimentary rocks especially Gondwana formation (Sandstone, Shale, coal). Found in Nirsa, Chirkunda area.

(5) Dissected Pediplain (DPP): Dissected pediplains are developed over Gondwana formations. Found in Jharia, Baghmara and Katras areas.

6) Denudation hills: - These are developed over metamorphic rocks found as moderately high hills and are mostly barren rocky exposure, found in north eastern/North western parts of the district.

(7) Pediplains are the most important for ground water point of view.

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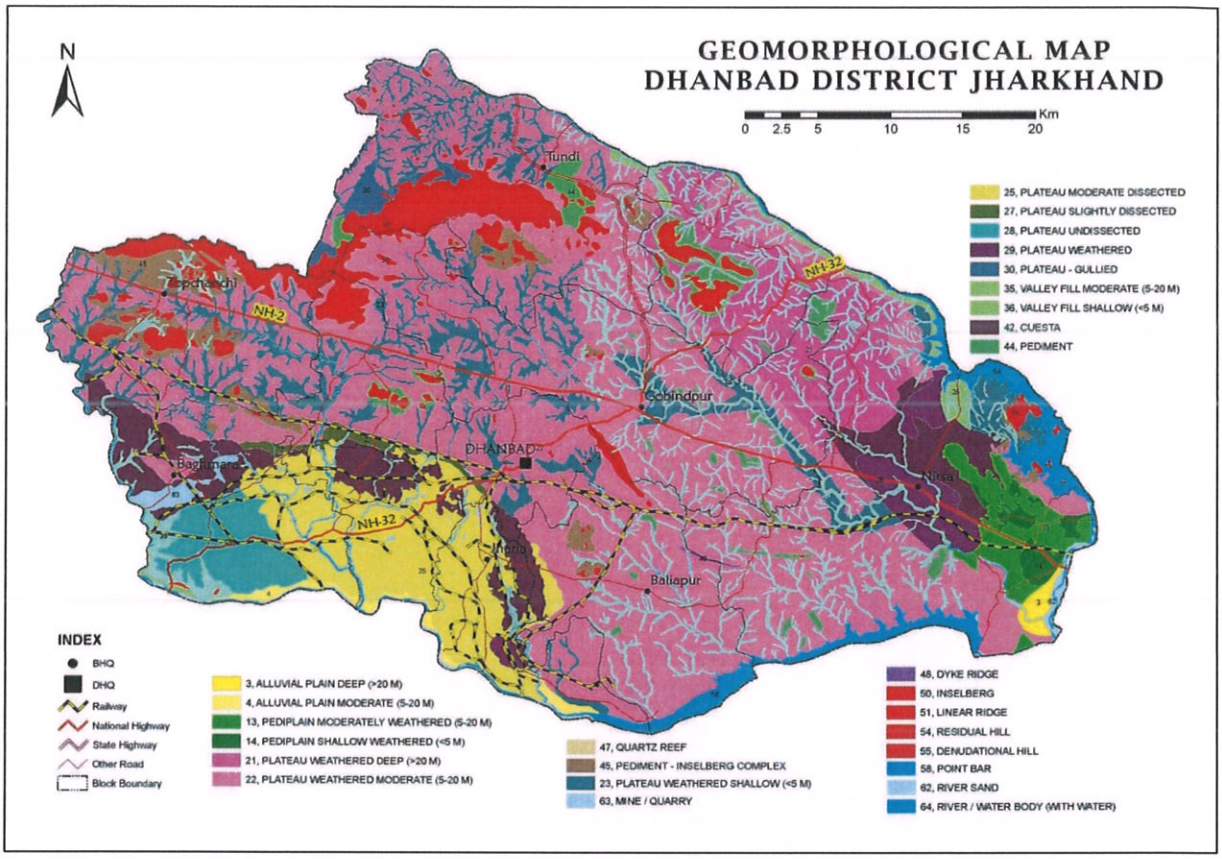

Source-JSAC

Figure No. 3.3: Geomorphological Map of District

Soils—

The soils of the district are mostly of the residual type. High temperature and high rainfall have led to the formation of lateritic type of soils from rocks of Archean metamorphic complex exposed in the greater part of the district and also from the lower Gondwana rocks in the west-central and east central parts. Texturally the soils of the district have been classified into four classes---

a. Stony and gravelly soils: These are low-grade soils having a large admixture of cobbles, pebbles and gravels generally found at the base of the hills.

b. Sandy soils: These types of soils are generally found near the river and streambeds. They contain more than 60 percent sand and poor in plant nutrients. They are also called hungry soils because of heavy manuring required.

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c. Loamy soils: They consist mostly detritus of decomposed rocks and vegetable matter and contain between 30 to 60 percent sand.

d. Clayey soils: These soils are sticky when wet and very hard and difficult to break when dry. They are very fertile but yield in such soils improve with addition of sand, lime, coarse bulky manures etc.

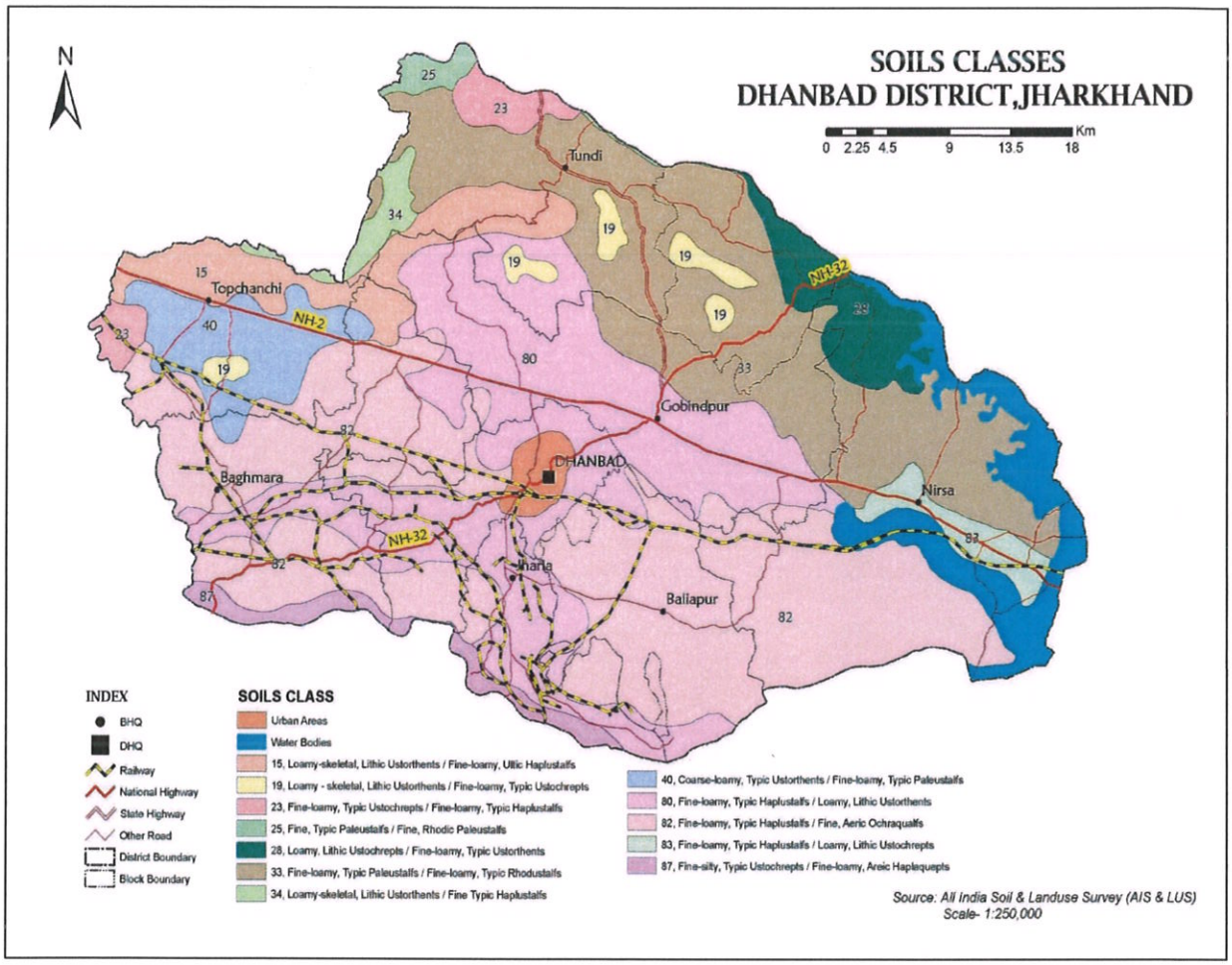

Figure No. 3.4: Soil Map of District

a) Climate Condition

The climate of the district is characterized by general dryness. It is very pleasant during the cold weather from November to February. Thereafter the climate becomes warm. It remains hot until the monsoon breaks towards the middle of June. With the setting in of rains the temperature falls and humidity rises, July to October are the rainy months. July and August are the wettest months. The average rainfall during July is 287 mm and that in August 445 mm. The average annual rain fall in the district is approximately 1306mm.

Dhanbad features a climate that is transitional between a humid subtropical climate and a tropical wet and dry climate. Summer starts from the last week of March and ends in mid-June. The peak temperature in summer can reach 48 °C. In winter, the minimum temperature remains around 10 °C with a maximum of 22 °C.

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

Table No. 3.2: Details of rainfall data of five years (from 2016 to2020)

JUL		AUG		SEPT		OCT		NOV		DEC	
R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP
236.3	-31	424.5	37	369.5	36	25.3	-75	0.0	-100	0.0	-100
560.3	65	174.6	-44	123.1	-55	176.2	77	0.0	-100	0.0	-100
243.6	-28	196.7	-37	127.2	-53	21.5	-78	0.0	-100	17.5	183
268.5	-17	251.2	-17	311.1	20	164.2	82	0.0	-100	5.6	4
273.5	-15	252.1	-17	185.3	-29	82.5	-8	1.1	-86	0.3	-95

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	1.9	-85	17.6	1	2.7	-86	0.4	-98	45.7	-8	147.7	-26
2017	9.5	-21	0.0	-100	10.6	-46	17.6	-3	45.6	-8	123.3	-39
2018	0.0	-100	0.0	-100	0.0	-100	63.9	251	45.6	-8	186.7	-7
2019	0.0	-100	24.8	38	7.1	-64	40.5	75	58.6	11	108.5	-49
2020	14.8	38	5.2	-71	69.1	247	27.9	21	71.4	35	198.8	-7

Source: CRIS, Hydromet division

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b) Demography

As of 2011 census, Dhanbad City had a population of 26,84,487. Males (14,05,956) constitute 52.37% of the population and females (12,78,531) 47.63%. It has a sex ratio of 909. Dhanbad has an average literacy rate of 74.52%, higher than the national average of 74.04%: male literacy is 83.81% and female literacy is 64.29%. 13.91% is the child proportion (0-6 years of age).

Table No. 3.3: Demography

Title	Count	Details
District	–	Dhanbad
Created On	–	26th October 1956
Area	2074 Sq. Km	North East Of Jharkhand
Location	–	Latitude:-23.795399 & Longitude:-86.427040
Blocks	10	Dhanbad, Baghmara, Nirsa, Topchanchi, Tundi, Purbi Tundi, Govindpur, Baliapur, Egarkund and Kaliasole
Circle	09	Dhanbad, Baghmara, Nirsa, Topchanchi, Tundi, Purbi Tundi, Govindpur, Baliapur,Jharia
Panchayat	383 & 256	As per old gazetter & As per new gazetter
Villages	1209	–
Population	26,84,487 Persons	Male-14,05,956 Female-12,78,531 (As per Census 2011)
Population Density	1316	Persons per Sq. Km

Title	Count	Details
Schools	1990	Primary,Middle schools and High schools
Technical Institutions	07	ISM, Bit sindri, CIMFR, PMCH Mining Institute, ITI, Others.
Hospitals	192	1 District Hospital, 8 Community Health Centers, 7 Primary Health Centres,148 Health Sub Centres and 28 Additional Public Health Center

Table No. 3.4: population data of the Dhanbad district

Urban/Rural	Indicator	Value
All	Number of households	507064
Rural	Number of households	211024
Urban	Number of households	296040
All	Total population - Person	2684487
Rural	Total population - Person	1124093
Urban	Total population - Person	1560394
All	Total population - Males	1405956
Rural	Total population - Males	581956
Urban	Total population - Males	824000
All	Total population - Females	1278531
Rural	Total population - Females	542137
Urban	Total population - Females	736394
All	Persons aged 0 to 6	373394
Rural	Persons aged 0 to 6	171670
Urban	Persons aged 0 to 6	201724
All	Males aged 0 to 6	194879
Rural	Males aged 0 to 6	88786
Urban	Males aged 0 to 6	106093
All	Females aged 0 to 6	178515
Rural	Females aged 0 to 6	82884
Urban	Females aged 0 to 6	95631
All	Scheduled Castes - Persons	437309
Rural	Scheduled Castes - Persons	163090
Urban	Scheduled Castes - Persons	274219
All	Scheduled Castes - Males	226362
Rural	Scheduled Castes - Males	83786
Urban	Scheduled Castes - Males	142576
All	Scheduled Castes - Females	210947
Rural	Scheduled Castes - Females	79304
Urban	Scheduled Castes - Females	131643

All	Scheduled Tribes - Persons	233119
Rural	Scheduled Tribes - Persons	198079
Urban	Scheduled Tribes - Persons	35040
All	Scheduled Tribes - Males	117256
Rural	Scheduled Tribes - Males	99381
Urban	Scheduled Tribes - Males	17875
All	Scheduled Tribes - Females	115863
Rural	Scheduled Tribes - Females	98698
Urban	Scheduled Tribes - Females	17165
All	Literate population - Person	1722204
Rural	Literate population - Person	649255
Urban	Literate population - Person	1072949
All	Literate population - Males	1014950
Rural	Literate population - Males	397144
Urban	Literate population - Males	617806
All	Literate population - Females	707254
Rural	Literate population - Females	252111
Urban	Literate population - Females	455143

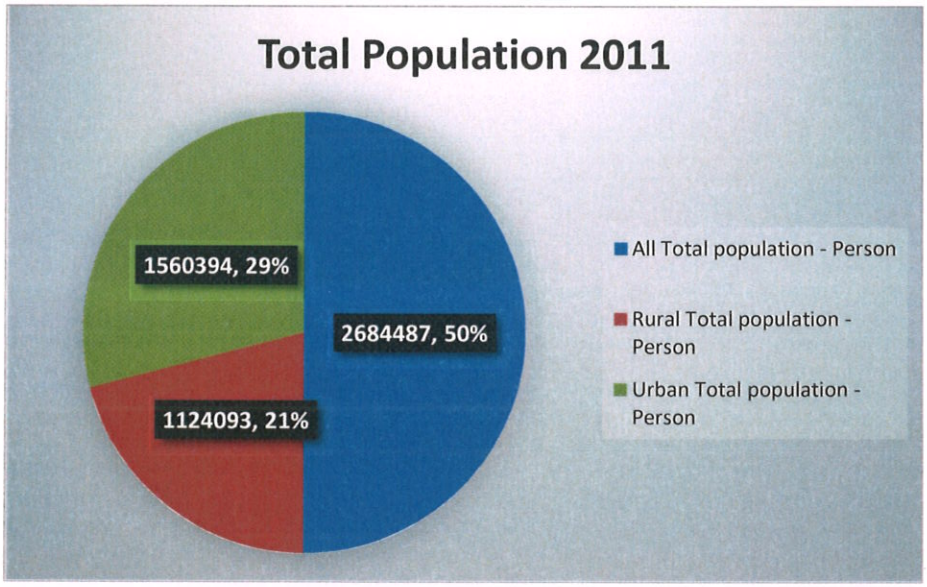

Figure No. 3.5: Pie Chart showing Block-wise population distribution of Dhanbad District

c) Cropping pattern

The district has mostly poor and infertile laterite soils. Alluvial deposits occur at the confluence of the Damodar and Barakar rivers. The soils of the district are broadly classified into four groups according to the texture:-

1. Stony and gravelly found near the foot hills.
2. Sandy soil- locally known as balu found in the river soils.
3. Loamy soil – found near the hills, and

4. Clay soil- found near the tanks and rivers which is very productive

The major crops grown in the district are paddy maize, Finger millet, Mustard, Chickpea, Potato and Onion, Mango, Guava, jack fruit and Sapota and other fruit crops and vegetables are also grown in the district. The cropping intensity of the district is 112%.

d) Topography & Terrain

Dhanbad has an average elevation of 227 m (745 ft). Its geographical length (extending from north to south) is 15 miles (24 km) and the breadth (stretching across east to West) is 10 miles (16 km). It shares its boundaries with West Bengal in the eastern and southern part, Dumka and Giridih in the North and Bokaro District in the west. Dhanbad comes under the Chota Nagpur Plateau. The Damodar is a major river of the Chota Nagpur Plateau. It rises in Palamu and flows eastward between the plateaus of Ranchi and Hazaribag. It is joined by the Bokaro, the Konar and the Barakar rivers. The Damodar enters Dhanbad district at its confluence with the Jamuria, a stream which marks the western boundary of Dhanbad with Hazaribagh District. Further east, the Damodar is joined by the Katri River which rises in the foothills below Parasnath and traverses through the coal-field area. The Barakar, which forms the northern boundary of the district, traverses about 77 km. It flows in south westerly direction up to Durgapur and then south till it joins the Damodar near Chirkunda.

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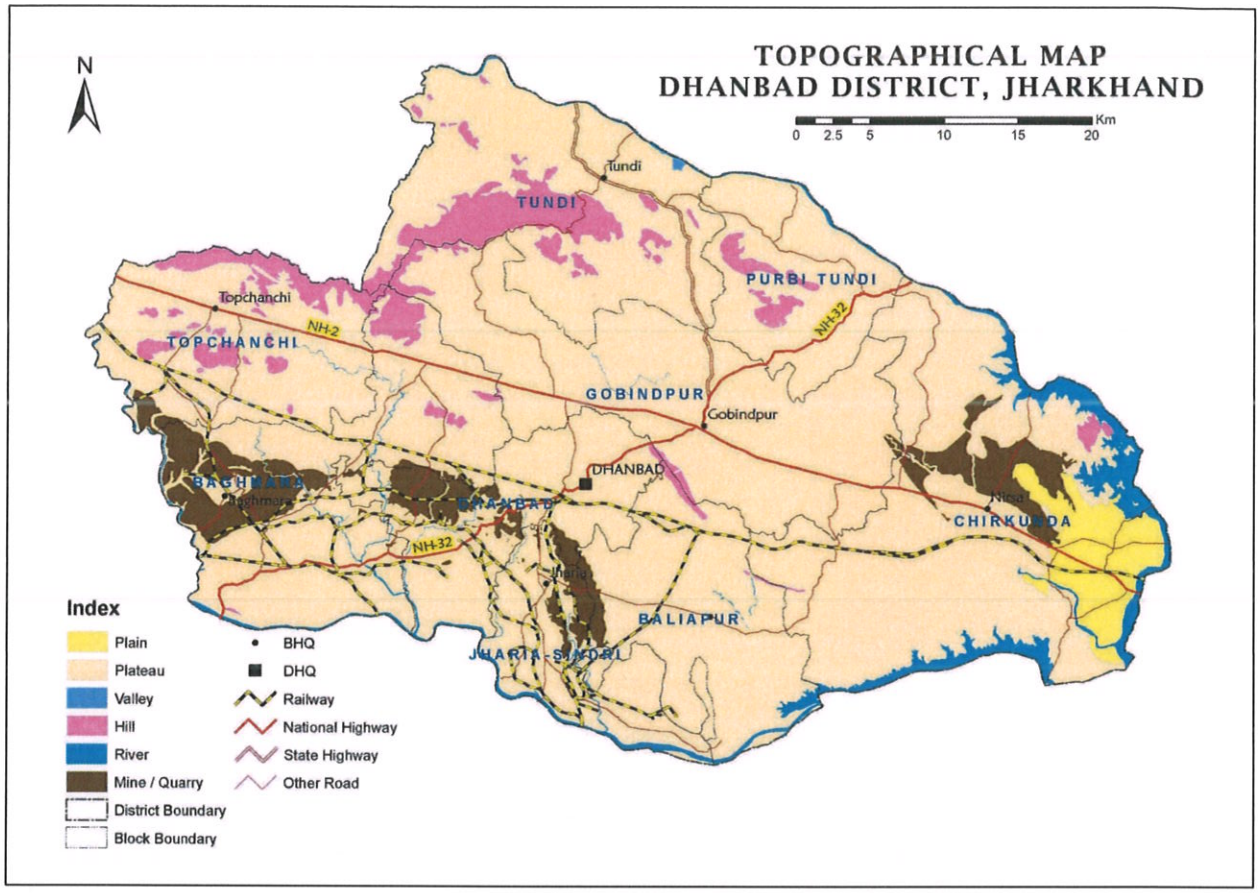
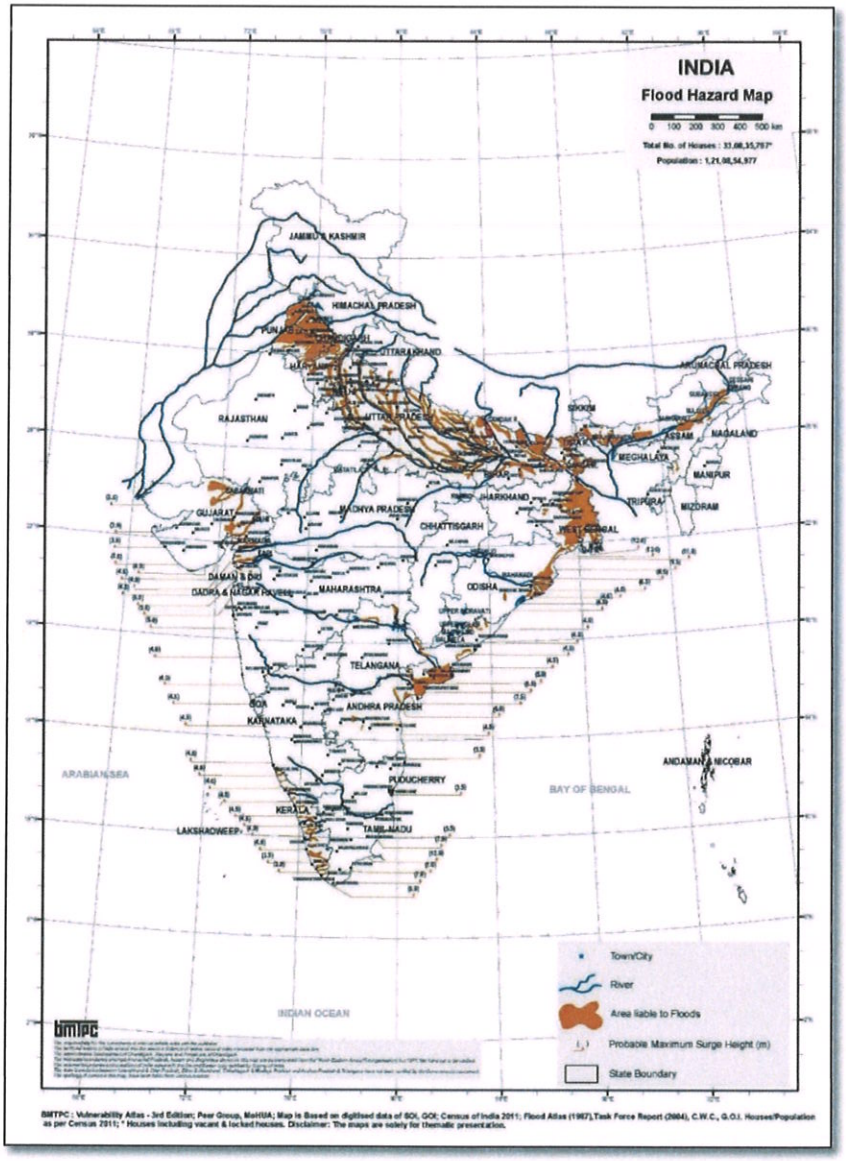


Source:JSPC

Figure No. 3.6: Topographical map of Dhanbad District, Jharkhand

e) 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/ Flash Flood have occurred in the following 14 districts- Sahibganj, Godda, Pakur, East Singhbhum, West Singhbhum, Saraikela- kharsawan, Garhwa, Palamu, Chatra, Ramgarh, Bokaro, Dhanbad, Gumla, Simdega.



Source: BMPTC

Figure No. 3.7: Flood hazard map

f) 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.

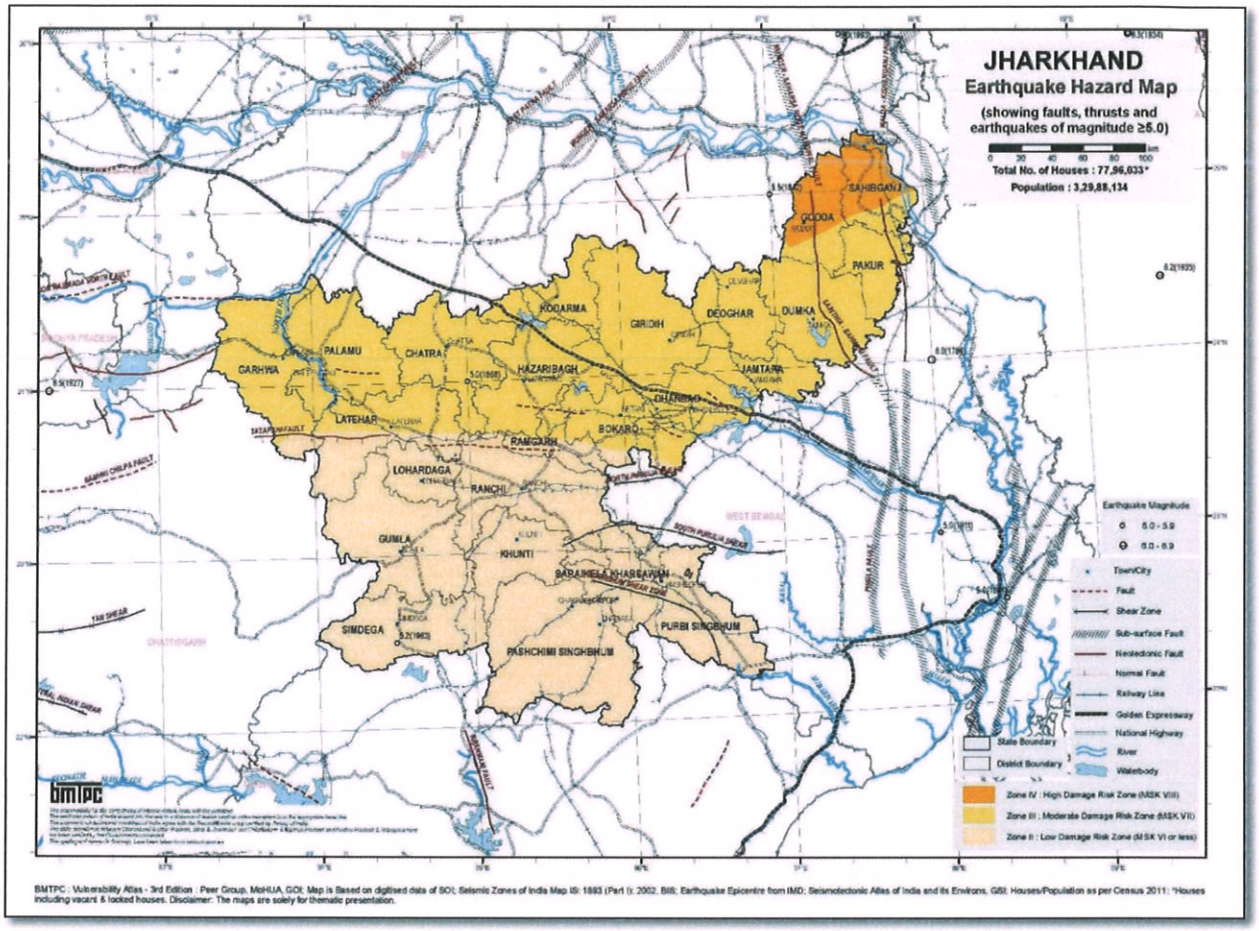


Figure No. 3.8: District Earthquake Map

Jharkhand flora and fauna have a rich variety. The territory of Jharkhand provides a panoramic view of a wide variety of flora and fauna housed within the territory. In fact, the national parks and the wildlife sanctuaries in Jharkhand offer a rich variety in terms of biodiversity.

g) Flora

Moreover, talking about the flora of Jharkhand, it can be said that the Jharkhand flora mostly consists of dry and moist deciduous forests. It is noteworthy in this context that Jharkhand possess a semi-arid landscape, which suffers an acute shortage of water during the hot summer months: therefore, dry deciduous trees are common in the territory of Jharkhand. Among the important trees that form an important part of the fauna at Jharkhand are sal, jackfruit, jamun, kendu, gambhar, shisham, mahua, katha, lac, pesar, mango, aasan, baheda and bamboo.

Fauna

Jharkhand, which literally means 'the territory of forests', is known for its dense evergreen forests and wildlife. In fact, the state of Jharkhand is known to possess the richest evergreen forests in India. Statistics prove that about 200 species of avifauna is found in the territory of Jharkhand.

Among the major animals that form an integral part of **Jharkhand flora and fauna** are:

- Elephant
- Bison
- Wolf
- Antelope
- Rabbit
- Fox
- Sambhar
- Wild boar
- Python
- Squirrel
- Blue bull
- Mongoose
- Jackal
- Honey badger
- Malabar giant
- Tiger
- Deer
- Langur
- Rhesus
- Python
- Porcupine
- Wild cat, etc.

These animals are found in the national parks and wildlife sanctuaries of the territory. Some of the important animal reserves in Jharkhand are:

- Hazaribagh Wildlife Sanctuary
- Betla National Park, etc

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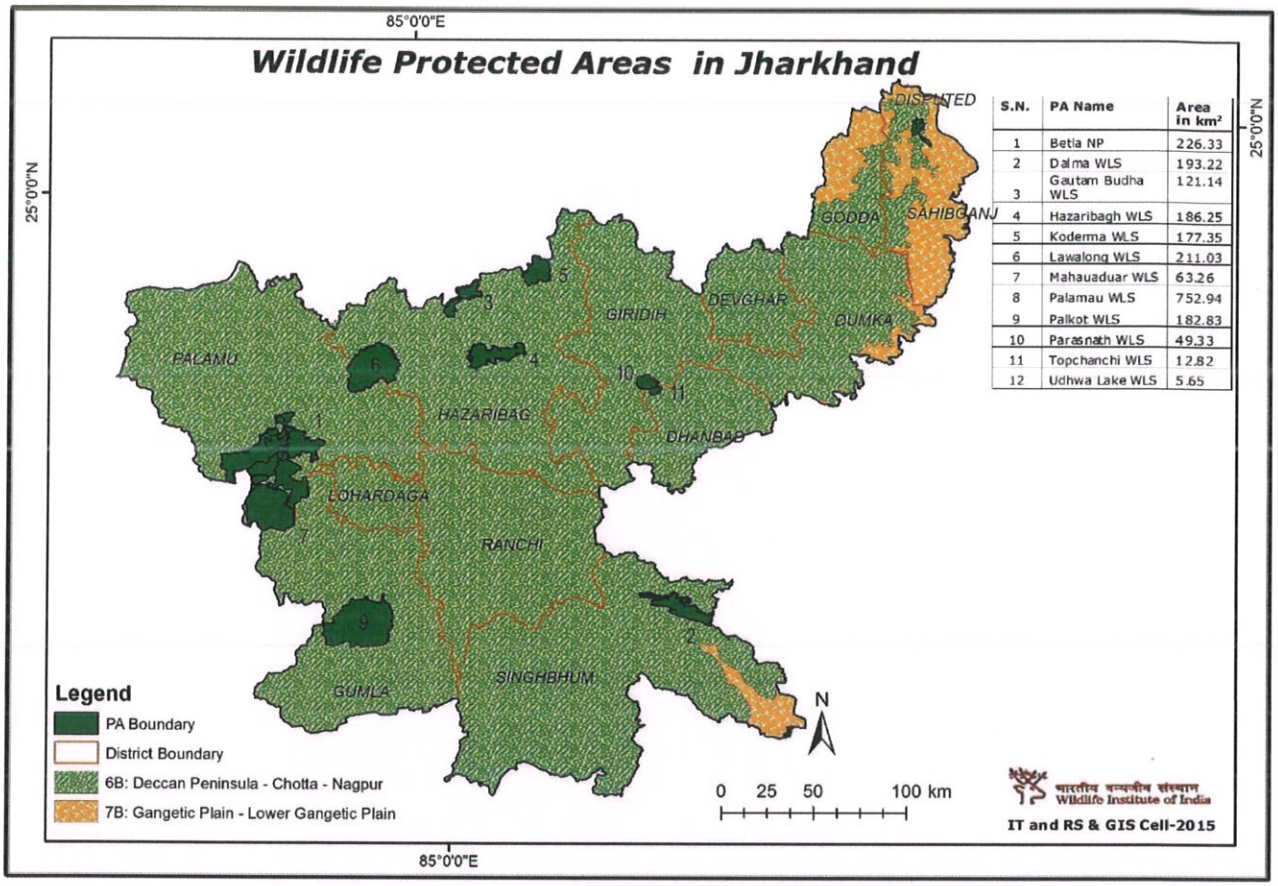

Figure No. 3.9: Wildlife Protected area in Jharkhand District

CHAPTER- 04
GEOLOGY OF THE DISTRICT

East On the industrial map of lndia, Dhanbad has a special place of Importance. It is chiefly on account of its Coking coal collieries. The famous Jharia coalfield is situated in Dhanbad district. The Jharia coalfield has been exploited and still under exploitation. Geological formation of the Dhanbad district comprises of mainly rocks of Archaean, Vindhyan and Gondwana ages, the last cut by dykes of Deccan trap age. Archaean rocks include both schists of Dharwar age and gneisses and granites. Schists, mainly horn-blendic and biotitic, are the oldest rocks of the area and occur as parallel and lenticular bands in the gneisses. Schists are intruded by epidiorites. amphibolites, and gneisses. Garneti ferrous sillimanite, graphite-schist, srmilar to Khondalites. Smaller patches of these rocks are found in the manner of inclusions in the most prevalent, and biotite and sillimaniteschists' are rare. Gneisses and granites are, however, the most predominant rocks of the area as in other parts of Chotanagpur. They give rise to prominent groups of hills in the northern and southern parts of the district.

The metamorphic terrain of the Dhanbad district is underlain by a wide range of geological formations ranging in age from Archaean to Recent. The Archeans and Gondwanas constrtute the major parts. Thin veneer of Quaternary alluvial deposits occurs in the topographic depressions along the Damodar and Barakar River.

Table No. 4.1: Geological of District

Age	Formation	Litho-type
Jurassic or Tertiary	Dolerite dyke Mica Lamprophyre Sills & dykes	
Upper Permian	Raniganj	Fined grained feldspathic sandstone, shale and coal seams
Middle	Barren Measures	Buff colored sandstone. shale and carbonaceous shale
Lower Permian	Barakar	Buff colored coarse and medium grained feldspathic sandstone. grits shale and carbonaceous shale and coal seams.
Upper	Talchir	Greenish shale and fined grained sandstone
	Unconformity	
Archean	Metamorphic	Peliticschists, quartzites, para- and ortho-amphibolites.

Source: Geological succession of Jharia Coal field proposed by Prof D Chandar (1992)

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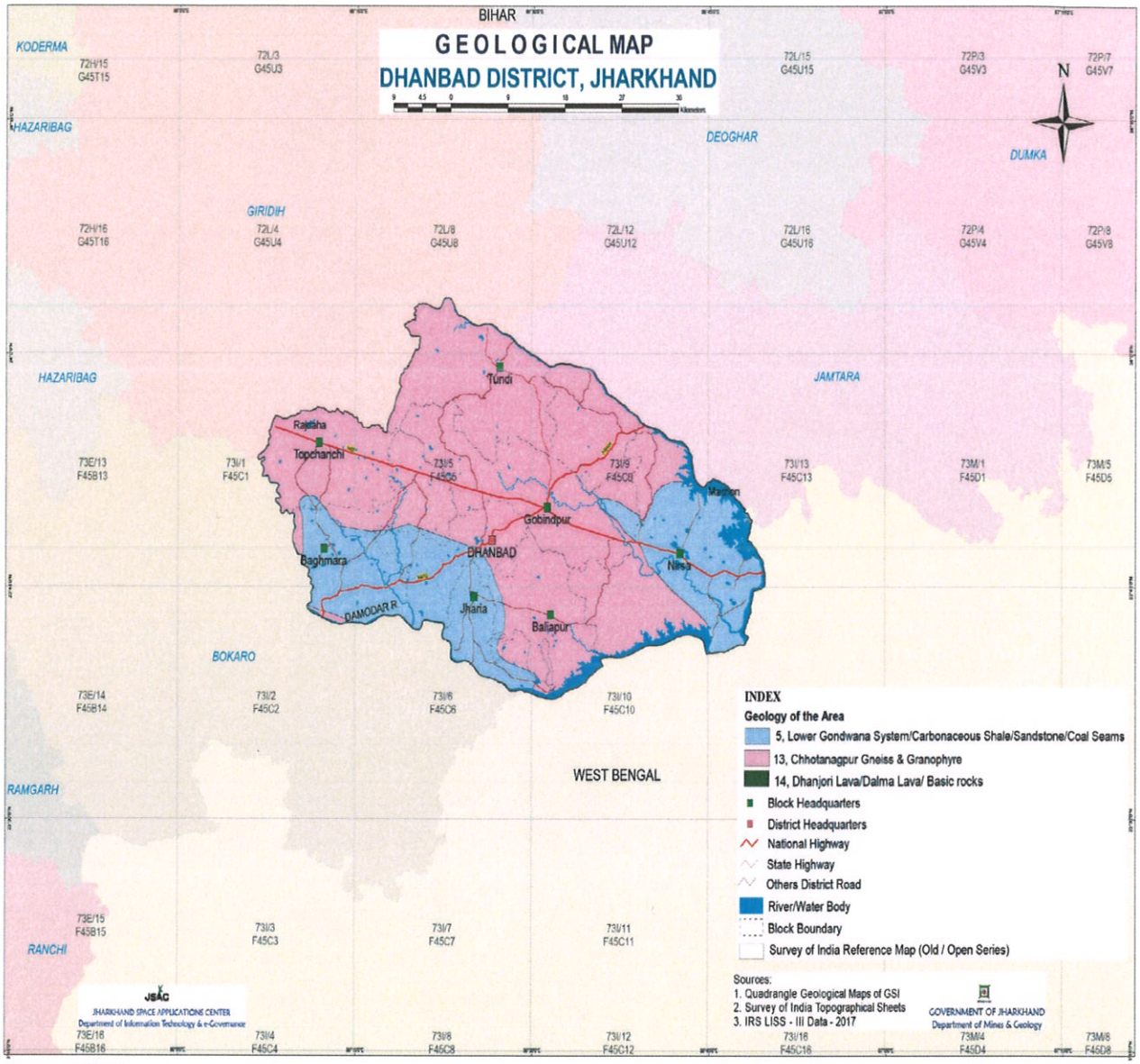

Souce:JSAC

Figure No. 4.1: Geological map of Dhanbad district

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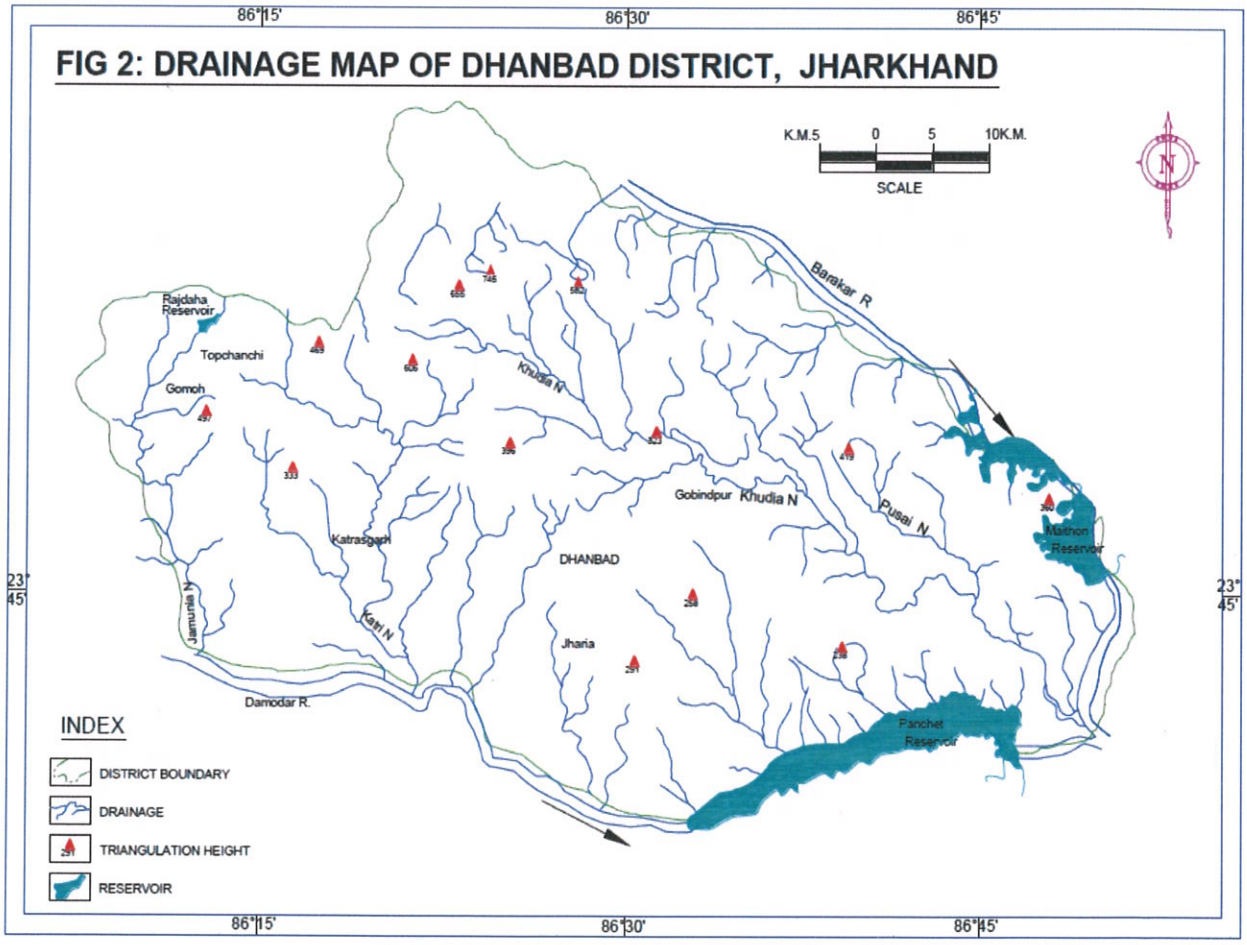
CHAPTER- 05
DRAINAGE OR IRRIGATION PATTERN

The drainage system of the district is the part of Damodar sub-basin. All the rivers that originate or flow through the district have an easterly or south easterly course. The Damodar is the most important river with an easterly course for about 125 km. streams as Jamunia, Katri, and Pusai are originating from northern hills of Parasnath and Tundi areas. These are flowing from N – S to NNW – SSE and meeting Damodar river. The Barakar river is the most important tributary of the Damodar and their confluence marks the eastern border of the district. It recieves from the west its only tributary, the Khudia, which takes its rise in the extreme west of the district between the parasnath and Tundi ranges.

The drainage map of the district is shown in **Fig No. 5.1.**



Source:CGWB

Figure No. 5.1: Drainage order map of district

Table No.5.1: Details of major rivers of Dhanbad District

S.No.	Name of theRiver	Area drained (Sq.Km)	%Area drained in The District
1	Khudiya river	4.06	0.199
2	Kudia river	0.58	0.028
3	Katri rover	1.22	0.060
4	Jamuniya river	7.33	0.359
5	Ghl river	0.30	0.015
6	Damodar river	24.91	1.221
7	Barakar river	51.92	2.545

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

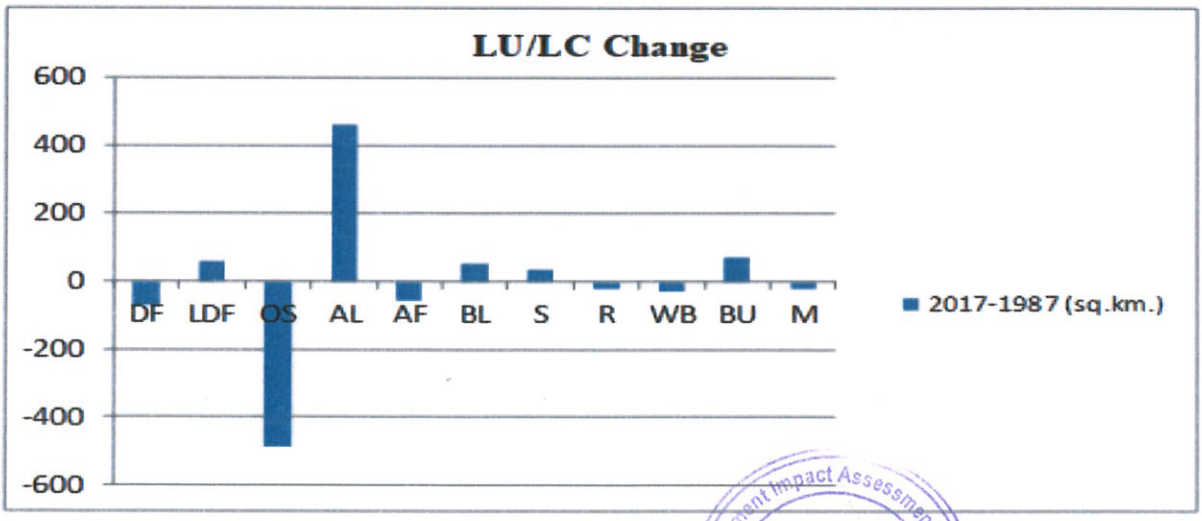
Land put to non-agricultural use covers 431 sq. km., Barren and uncultivable waste covers 325 sq. km., cultivable wasteland covers 113 sq. km. and current fallow is 392 sq. km. Net area sown is 346 sq. km. Among all the blocks of the district, Forest cover is highest in Tundi block. Barren and uncultivable waste is highest in Nirsa followed by Baghmara block. Land put to non-agricultural use is maximum in Nirsa block. Cultivable waste is maximum in Nirsa block. Net area sown is maximum in Govindpur and Tundi blocks.

The major cereal crops of the area are paddy, maize and wheat. Farmers of the area have developed interest in vegetable and fruit growing and dairy due to demand from the city area.

Table 6.1, Land Use details of district

Sl. No.	Land Use	Dhanbad (in %)	Jharkahnd (in %)
1	Forest	9.27 %	29.2 %
2	Net sown area	18.49 %	22.7 %
3	Barren and unculturable waste	15.96 %	7.2 %
4	Non agricultural use	24.06 %	9.9 %
5	Orchards	1.57 %	2.5 %
6	Pasture	0.28 %	
7	Culturable wastelend	5.57 %	3.5 %
8	Current and Current fallow	24.80 %	25.0 %

(Source: Fertilizer and Agriculture Statistics, Eastern Region)



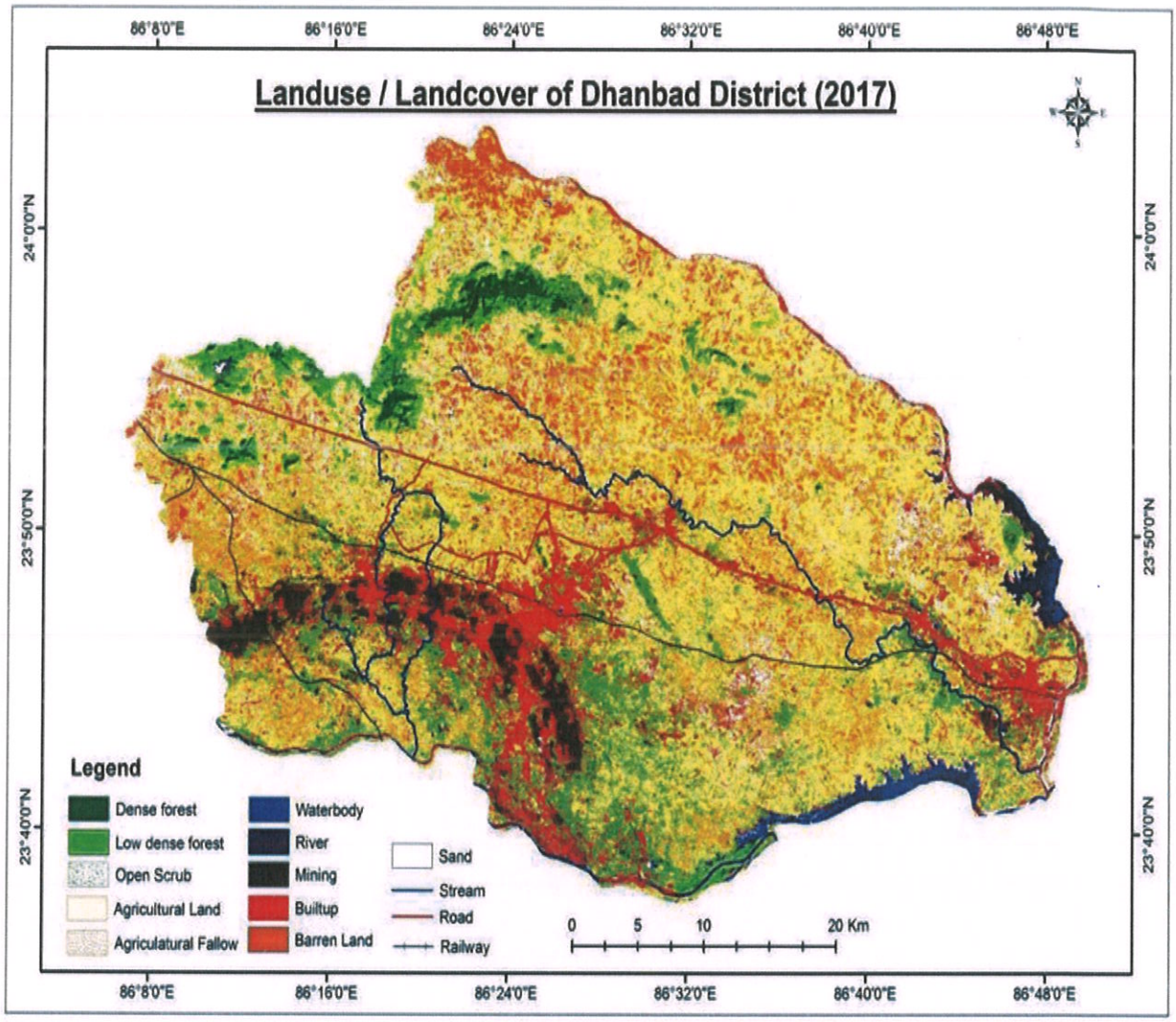


Figure no. 6.1: Landuse map of district

a) Forest detail of the area

According to ISFR-2021 the State has a geographical area of 9,077 sq.km (including Gumla). The total recorded forest area (RFA) of the state 2,658 sq.km which is nearly 29.28 % of the geographical area of the state. Of the total recorded forest area, Very Dense forest constitute 323 sq.m., Mod. Dense Forest 916 sq.m. and Open forest 1,419 (ISFR-2019). Forest cover is spread over 189 sq. km. area in the district. This district has relatively less forest cover. Forest is confined in the northern hilly areas. Important trees are sal, sisam, gamhar, kendu, mahua, 5 bhelwa, imaly etc.

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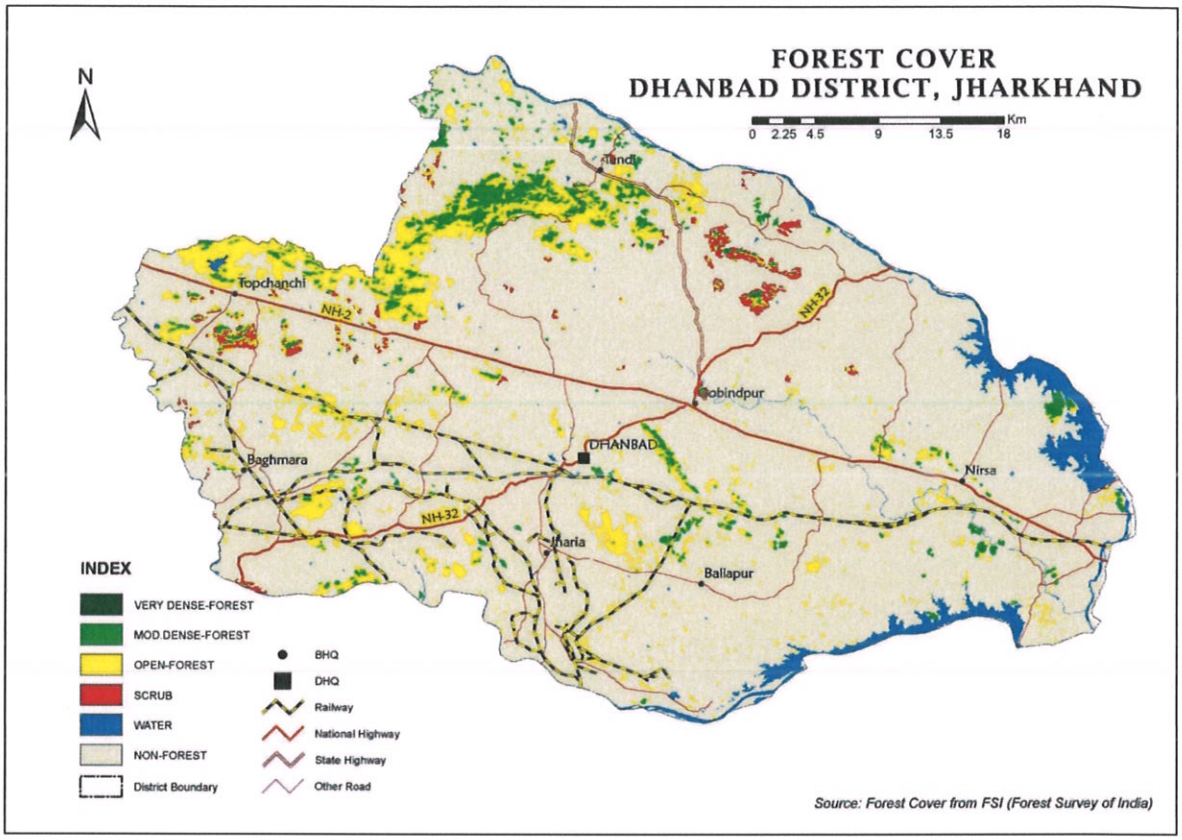

Figure no. 6.2: Forest cover map of district

b) Agriculture & Irrigation

The major crops grown in the district are paddy maize, Finger millet, Mustard, Chickpea, Potato and Onion, Mango, Guava, jack fruit and Sapota and other fruit crops and vegetables are also grown in the district. The cropping intensity of the district is 112%. The area and the productivity of the major field crops are indicated below:-

Table 6.2, Principal crops of the district:

Crop	Area (ha)	Productivity (Q / ha)
Summer Rice	148	26.2
Kharif Rice	36051	40.4
Maize	6262	24.5
Wheat	2158	26.0

Finger millet	158	14.4
Chick pea	47	9.4
Potato	99	93.7
Animal (Cow)		2.5 ltr/cow

Source: Krishi Vigyan kendra, Dhanbad

Table No. 6.3: Area, Production and Productivity of major crops cultivated in the district

Crop	Area (ha)	Production (t)	Productivity (kg/ha)
Tomato	1177	23540	20.00
Onion	907	18140	20.00
Cauliflower	16.2	25632	167.00
Cabbage	768	12288	16.00
Chilli	939	11268	18.00
Okra		27076	14.00

Source: Agriculture Contingency Plan for the District: Dhanbad

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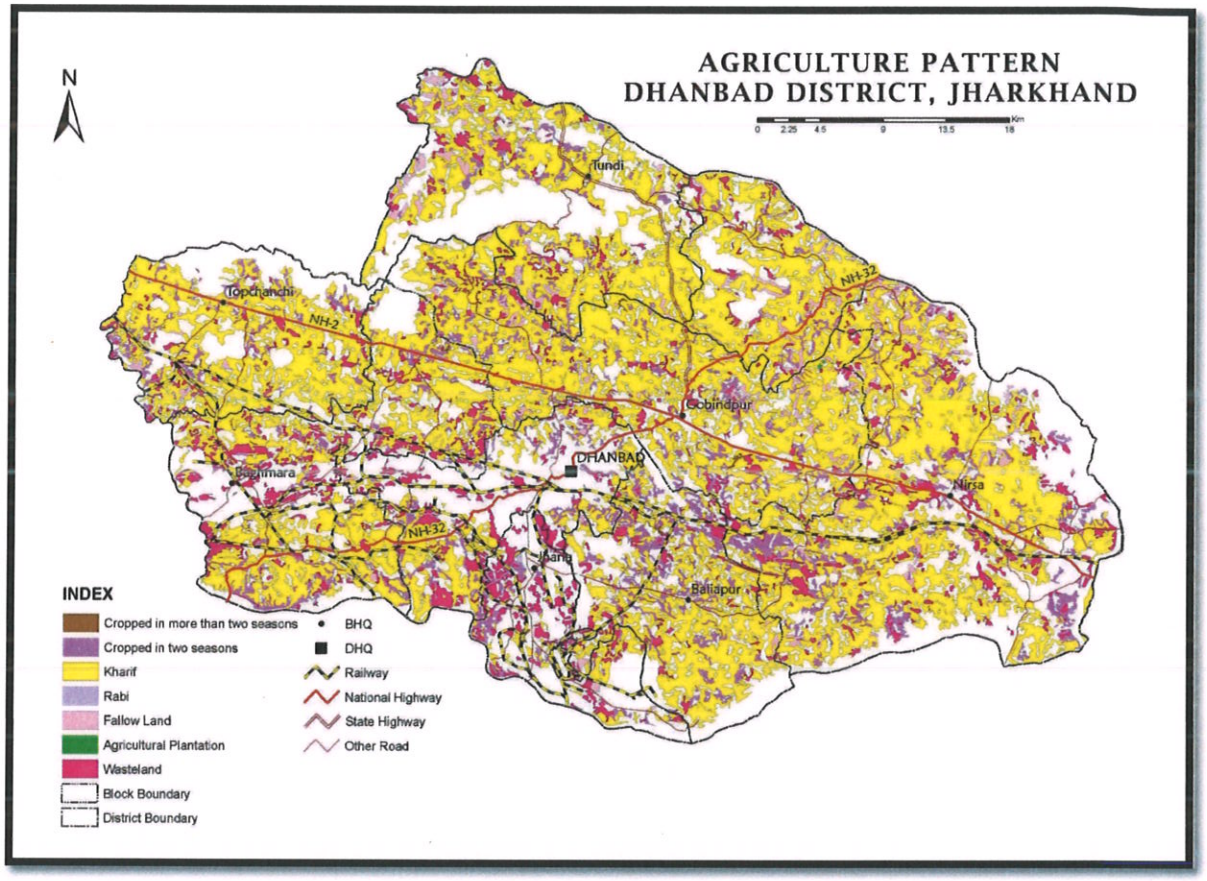

Figure no. 6.3: Agriculture Pattern map of district

Irrigation Facilities-

The rivers and streams of the district are flowing through the hilly areas and cannot be used for irrigation unless water is compounded. The slope of the land is such that rain water quickly after a spell of rain and most of the streams dry almost completely after the rainy season. Wells are difficult and expensive to dig because of presence of hard rock close to the surface. Rain water is stored in Ahars or reservoirs and then led to the field by channels and sub- channels. Uplands are generally not irrigated recently, number of medium and minor irrigation schemes have been taken up and executed in order to ensure a regular source of water supply.

From the cropping area data, it can be inferred that the unirrigated kharif crops continue to cover 95% of the total cropped area. Rabi irrigated crops cover only 3% of the total cropped area. Summer irrigated crops are only 1%. Rabi crops and summer crops are not popular in the district due to lack of irrigation facilities Total area irrigated in Dhanbad is 270 sq. km. streams sources irrigate about 70 sq. km. area. Irrigation by ponds is covered in 65

sq. km. area. Dug wells cover about 50 sq km. areas. Lift irrigation is done in 31sq. km. area while other sources cover 24 sq. km. area.

c) Mining

Jharkhand state enjoys a strong position on the mineral map of the country. The state has potential deposits of energy, ferrous. non-ferrous, fertilizer, industrial, refractory, atomic, strategic, precious and semi-precious groups of minerals. The deposits of Coal. Iron ore, Bauxite, Uranium, Limestone, Dolomite, Pyroxenite, Quartz and Quartzite available in sufficient quantity In Jharkhand. The deposits of China Clay, Fireclay, Magnetite, Graphite, Kyanite, Feldspar, Mica& Decorative Stones are available in plenty. The deposits of Andalusite, Manganese, Chromite, Beryl, Talc, Gold, Bentonite are available in small quantity also.

Dhanbad is the second largest city by population and also the second largest urban agglomeration In Jharkhand after Jamshedpur. Dhanbad is famous for its coal mines and industrial establishments; the city is surrounded by about 102 coal mines with a total production of 34 million tonne (approx).There are a number of coal washeries present there. The city Is also known for its power generation plants, Hydro power is generated at Maithon and Panchet, Tata Power and Damodar Valley Corporation (OVC) are setting up a 1050 MW thermal power plant at Maithon. ONGC is using CBM (Coal beded methane} for power generation at some areas.

Coal: Coal seams occur In the Jharia coalfield in two series of strata-Barakar series or the Lower coal measures and the Raniganj series or the upper coal measures. The Barakar series coal is generally coking and they contain a relatively higher proportion of fixed carbon and low percentage of volatiles and moisture than the Raniganj series coals. The better quality coals of the Barakar measures are excellent steam coal and form hard metallurgical coke.

Fire Clay: Fire-clay suitable for the manufacture of fire-bricks occurs as layers or thin beds in the coal-bearing sedimentary formations.

Clays: Brick earth is found in huge quantities throughout the district except in the hilly areas and sandy tract. Besides the above minerals. thin beds of good quality Industrial clays have also been found in Barakar formation exposed In the district.

Building Materials: Amongst the rocks used for building purposes in this area, the massive sandstones of the Barakar measures of the Jharfa coalfield are good building material used In the construction of bridges and roads.

Sand used as building material is found In the River basin In Damodar and Barakar River and some in its tributaries.

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CHAPTER- 07
SURFACE WATER AND GROUND WATER SCENARIO OF THE DISTRICT

Groundwater occurs in the area under unconfined condition in the weathered zones at shallow depths in most of the litho units in the Achaeans and almost all the litho units in the Gondwanas. Groundwater occurs under confined to semi-confined condition where the fractures are deep seated and are unconnected with the top weathered zone.

Aquifer geometry-The aquifer geometry for shallow and deeper aquifer has been established through hydro geological studies, exploration, the surface and subsurface geophysical studies in the district covering all geological formations. The aquifer can be divided into two zones – shallow and deeper aquifer.

(i) Shallow aquifer – The shallow aquifers are being taped through dug wells, dug cum bore wells or shallow bore wells drilled to the depth of 60 m. The weathered mantle and shallow fractures constitute the shallow aquifers. The thickness of weathered mantle varies from 5 to 25 mbgl. The well inventory data suggest that the maximum depth of dug well in granite gneiss and Gondwana is 17 m and 25 m respectively. Exploration in granite gneiss indicates that shallow fractures are less productive. Many dug wells and hand pumps get dried up during summer.

(ii) Deeper aquifers:

Depths –to-water levels and groundwater conditions:

Groundwater conditions in various litho units are usually described under two broad heads viz.

a) The porous formations and
b) The fissured formations

I. **The porous Formations:**

The main members of the porous formations are the Newer and Older alluvium of the Recent and sub-recent age. Recent alluvium is found in very thin veneers in topographic depressions along the Damodar River. Insignificant occurrences may also be noticed along Barakar River and in some major tributaries of these two. They cannot however, be considered as potential aquifers.

II. **The Fissured Formations:**

Achaeans meta-sedimetaries, the granites, intrusive metabasics and the Lower Gondwana sedimentary constitute the productive aquifer. The first three come under consolidated Formation and the last one under semi consolidated Formation.

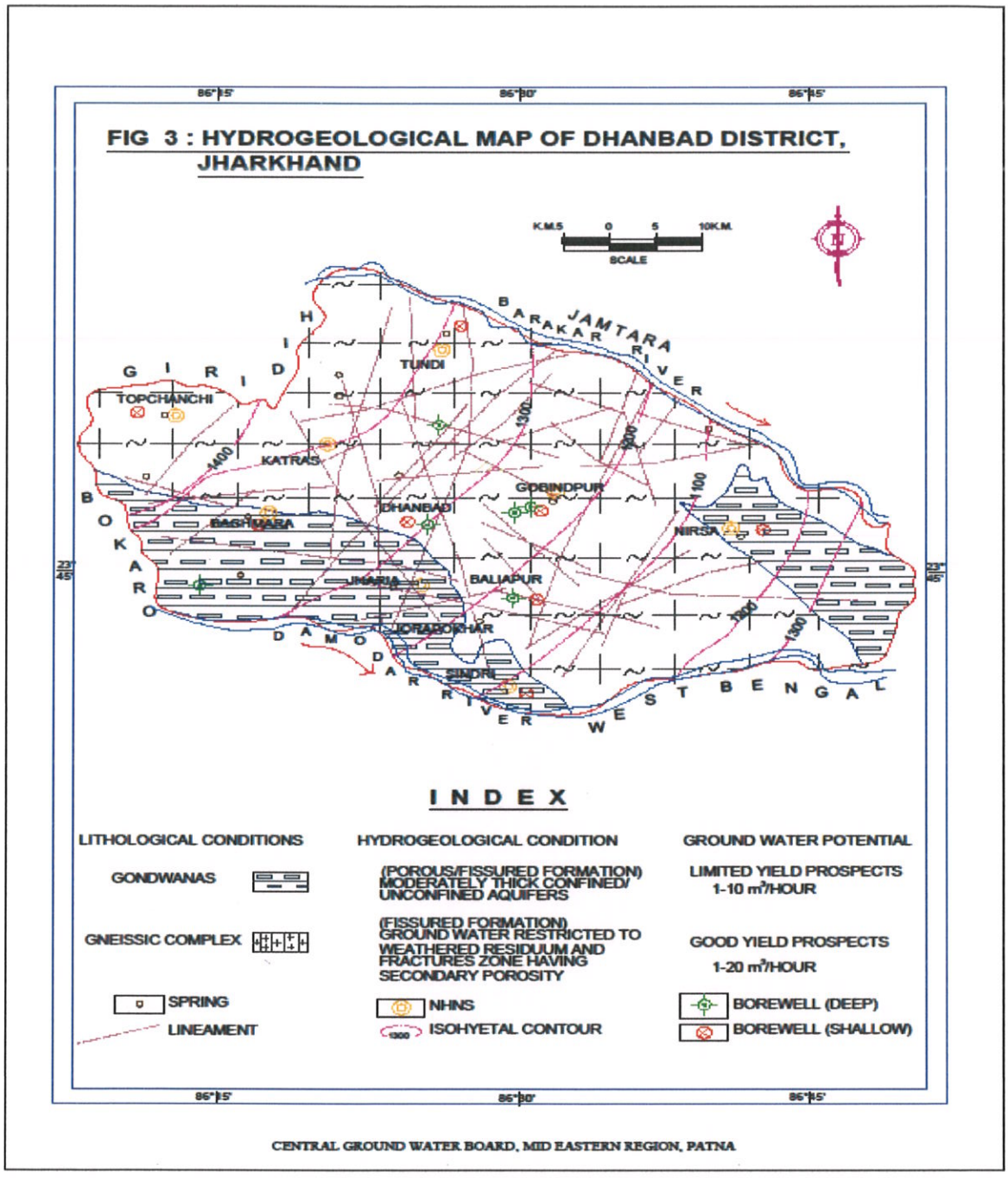

Figure No. 7.1: Hydrogeological map of district

Source: CGWB

Depth to water level: -

Pre monsoon depth to water level: - Pre-monsoon depths to water level map of dug wells show water level between 1.29-14.60 mbgl. Topchanchi, Govindpur, Jharia, Katras, Nirsa areas show water level between 8-10 mbgl While Tundi,Rajganj have water level between 6-8 mbgl. Katras areas have deepest water level (14.60mbgl).

Post monsoon depth to water level: - During this period maximum area (Govindpur, Nirsa, Rajganj, Topchanchi, Tundi) have water level between 2.10-3.50 mbgl. And small patches of Mahuda, Sindri Dhanbad, Katras and Topchanchi area have 4-6 mbgl water level.

Table 7.1: Depth to water level of NHNS of Dhanbad district (2012)

Sl No.	Location of Wells	May (2012)	November (2012)
1	Govindpur	3.46	2.30
2	Jharia	1.29	2.10
3	Katras	14.60	6.15
4	Nirsa	3.31	2.00
5	Rajganj	6.92	3.40
6	Sindri	7.59	4.20
7	Topchanchi	7.71	3.90
8	Tundi	6.00	2.50

Source- CGWB

Ground water level fluctuation

The seasonal ground water fluctuation map for dug well data is prepared based on the inventory wells of pre and post monsoon data**.** The map depicts that maximum (about 55 percent) area falls under 2-4m range while 20 percent area comes under 4-6m range and 20 percent area under 6-8 m. range while about 5 percent under 0-2 m range.

Abstraction structures: In the Dhanbad district ground water abstraction is mainly through dug wells. These are 5-15m deep tapping the weathered zone and shallow fracture zones. Presently there are more than 20,000 dug wells in the study area. The mode of lifting of water for drinking purpose from dug well is mainly through rope and bucket. Wells fitted with diesel pump set (5 HP) are in use for irrigation. Hand pumps in the district tape water from 30-60mbgl. Total **7766** nos. of hand pumps are functioning in the Dhanbad district.

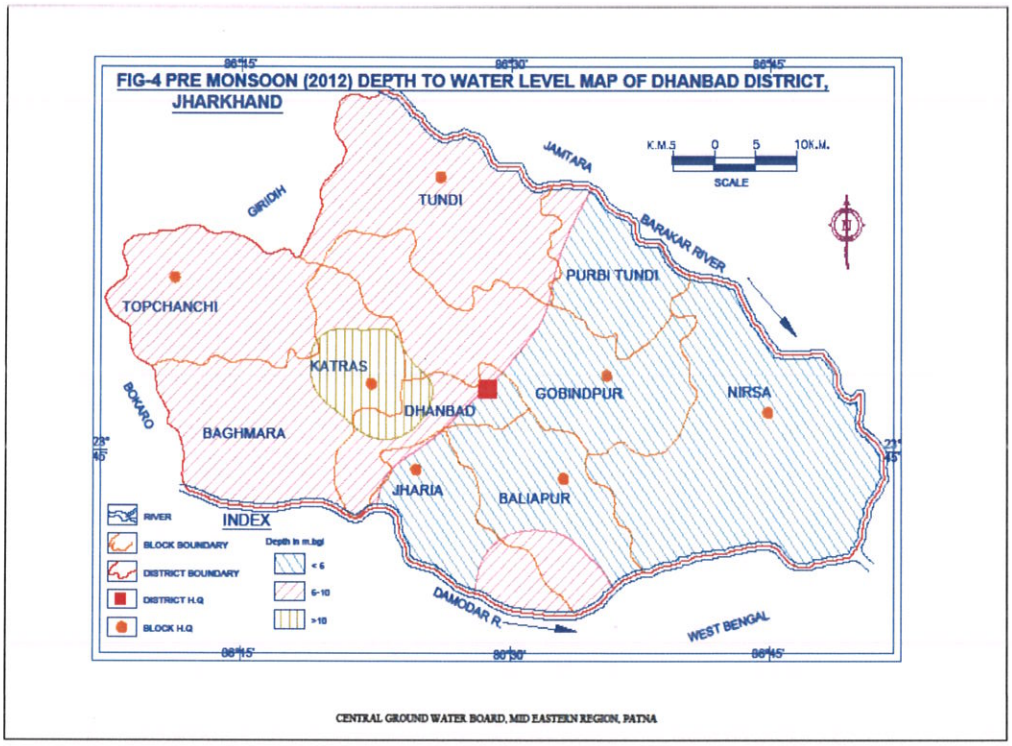

Fig. 7.2, Pre-Monsoon water level map

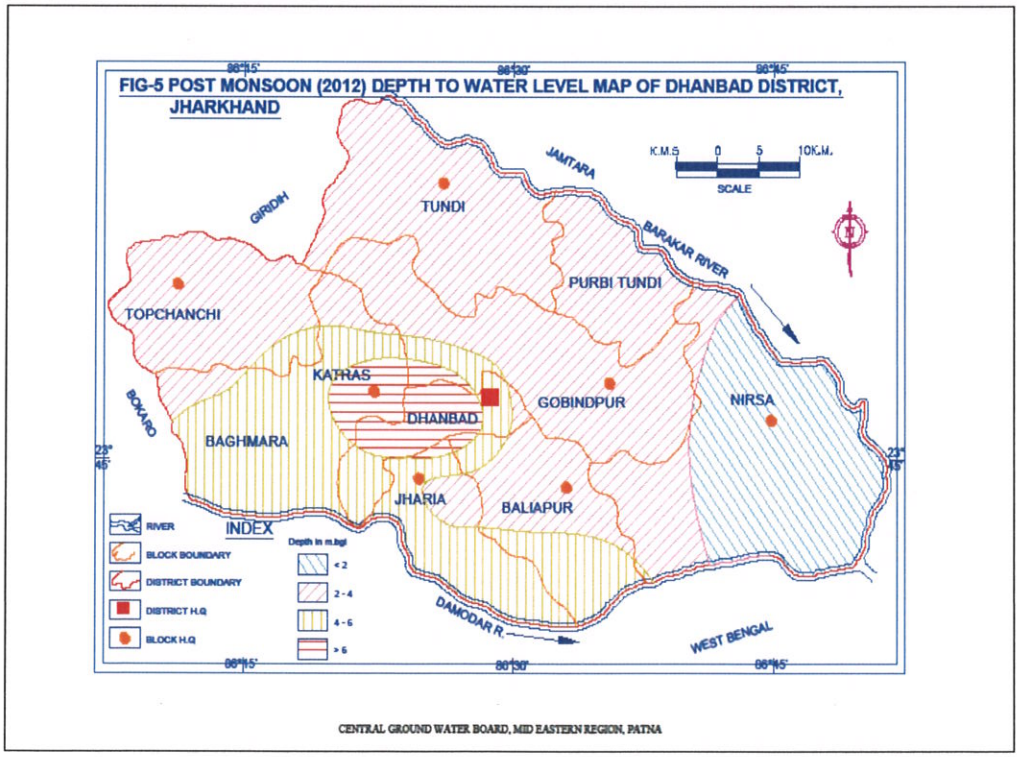

Fig. 7.3 Post Monsoon water level map

Source: CGWB

Ground water Resources-

The ground water assessment has been done based on the recommendation of the GEC-1997. The ground water assessment has been carried on block wise basis (2009) and the assessment varies between Jharia (9600ha) and Nirsa (35000ha). Jharia block falls in over-exploited category while Dhanbad block is in critical category. All other six blocks in the district fall in the safe category. The net annual replenishable ground water resources of the district are 134.91 mcm. The gross ground water draft for all uses is 70 mcm and allocation for domestic and Industrial requirement up to year 2034 is 58 mcm. The present stage of ground water development of the district as on 31st march 2009 is 52%. At present maximum ground water development is in Jharia block (105.63%) and Dhanbad sadar block (92%) and minimum ground water development is in Tundi block (42.55%). Details of block wise ground water Resources are given in Table below.

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Table 7.2: Block wise Ground water Resources of Dhanbad district in Ha-m (As on 2009)

Sl No.	Assessment unit	Command /Non-Command/Total	Net Ground Water Availability	Existing Ground Water Draft For Irrigation	Existing Ground Water Draft For Domestic And Industrial Water Supply	Existing Ground Water Draft For All Uses	Allocation For Domestic And Industrial Requirement Supply	Net Ground Water Availability For Future Irrigation	Stage Of Ground Water Development (%)	Categorization of blocks
1	2	3	4	5	6	7	8	9	10	11
1	Baghmara	23639	1890.38	412.03	582.97	995.0	885.00	593.35	52.63	**safe**
2	Baliapur	12521	1068.07	492.272	178.06	670.3	270.31	305.49	62.76	**safe**
3	Dhanbad	11148	1101.00	52.896	961.72	1014.6	1459.99	-411.89	92.15	**Critical**
4	Gobindpur	24404	2196.55	852.832	333.28	1186.1	505.95	837.77	54.00	**safe**
5	Jharia	11840	786.14	19.024	811.38	830.4	1231.75	-464.64	105.63	**Over-**
6	Nirsa	36501	3225.80	322.944	522.07	845.0	792.55	2110.30	26.20	**safe**
7	Tundi	25145	2125.42	695.072	209.27	904.3	317.70	1112.65	42.55	**safe**
8	Topchanchi	12927	1098.21	384.656	208.37	593.0	316.33	397.23	54.00	**safe**
	Total	**158125**	**13491.57**	**3231.73**	**3807.1**	**7038.8**	**5779.59**	**4480.26**	**52.17**	

Source- CGWB

Table-7.3: DETAILS OF CHEMICAL ANALYSIS OF SHALLOW AQUIFER WATER SAMPLES OF NHNS WELLS (2012)

S. NO.	Location	District	Well No.	EC µS/cm	CO3	HCO3	Cl	Ca	Mg	TH as CaCO3	Na	K
				at 25°C	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
1	Jharia	Dhanbad	BDD-1	577	0	160	49.6	24	28	175	37	12.1
2	Tundi	Dhanbad	BDD-2	605	0	98	67.4	56	17	210	33	2.2
3	Nirsa	Dhanbad	BDD-3A	1172	0	98	124.1	74	29	305	111	3.2
4	Topchanchi	Dhanbad	BDD 4	1970	0	268	259.0	160	78	720	43	3.2
5	Mahuda	Dhanbad	BDD-7A	973	0	289	67.4	26	68	345	52	8.8
6	Govindpur	Dhanbad	BDD-8A	588	0	277	14.2	34	15	145	48	5.3
7	Rajgani	Dhanbad	BDD-9	1690	0	390	195.0	86	60	460	143	1.2
8	Katras	Dhanbad	BDD-10	1750	0	196	241.1	126	86	670	68	4.8
9	Sindri	Dhanbad	BDD-11	1138	0	329	89.0	64	28	275	108	1.4
10	Dhanbad	Dhanbad	BDD-13	1384	0	234	184.3	58	75	455	62	17.5
11	Baghmara	Dhanbad	BDD-14	677	0	111	70.9	56	19	220	39	1.9

Source- CGWB

Status of Ground water development in District

The ground water is mainly utilized for domestic needs and for irrigation purposes. The ground water abstraction is mainly through dug wells and bore wells. The bore wells are fitted with hand pumps or submersible power pump. The stage of ground water development in the district is 52.17%. The highest stage of development is in Jharia (105.67%) and Dhanbad (94%) blocks and lowest stage of development is in Tundi (%) block. The Gondwana sandstones in general, are known to constitute good aquifers at many places. However, the yield potential of the areas adjoining active mines in the coal belt is poor. With continued dewatering of the active mine-pits, the neighboring wells register gradually lowering of water levels. The active mines often act as groundwater "sinks". In contrast, the water logged abandoned mines and pits act as potential sources of groundwater.

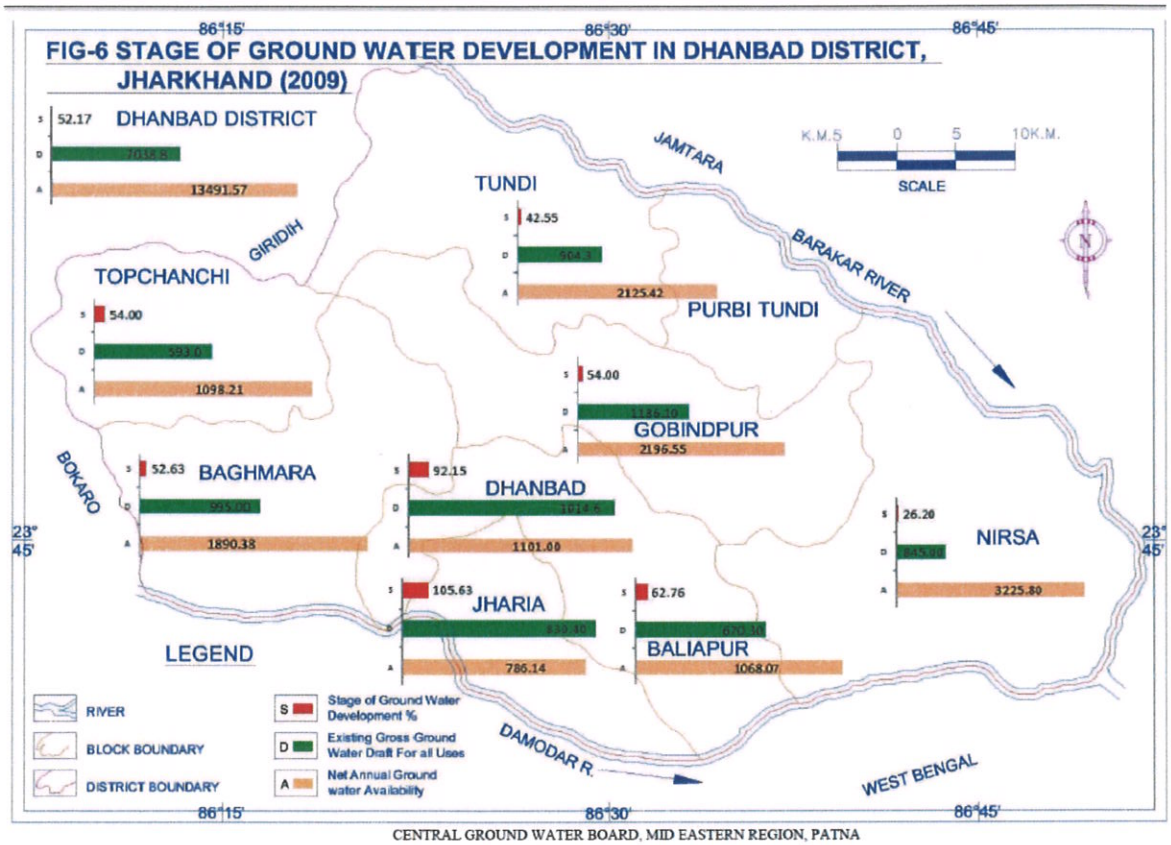


Fig. 7.4 Ground water development Map

CHAPTER- 08
RAINFALL OF THE DISTRICT AND CLIMATE CONDITION

The climate of the district is characterized by general dryness. It is very pleasant during the cold weather from November to February. Thereafter the climate becomes warm. It remains hot until the monsoon breaks towards the middle of June. With the setting in of rains the temperature falls and humidity rises, July to October are the rainy months. July and August are the wettest months. The average rainfall during July is 287 mm and that in August 445 mm. The average annual rain fall in the district is approximately 1306mm.

Dhanbad features a climate that is transitional between a humid subtropical climate and a tropical wet and dry climate. Summer starts from the last week of March and ends in mid-June. The peak temperature in summer can reach 48 °C. In winter, the minimum temperature remains around 10 °C with a maximum of 22 °C.

Details of rainfall data of five years (from 2016 to 2020) is furnished in Table below:

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	1.9	-85	17.6	1	2.7	-86	0.4	-98	45.7	-8	147.7	-26
2017	9.5	-21	0.0	-100	10.6	-46	17.6	-3	45.6	-8	123.3	-39
2018	0.0	-100	0.0	-100	0.0	-100	63.9	251	45.6	-8	186.7	-7
2019	0.0	-100	24.8	38	7.1	-64	40.5	75	58.6	11	108.5	-49
2020	14.8	38	5.2	-71	69.1	247	27.9	21	71.4	35	198.8	-7

JUL		AUG		SEPT		OCT		NOV		DEC	
R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP	R/F	%DEP
236.3	-31	424.5	37	369.5	36	25.3	-75	0.0	-100	0.0	-100
560.3	65	174.6	-44	123.1	-55	176.2	77	0.0	-100	0.0	-100
243.6	-28	196.7	-37	127.2	-53	21.5	-78	0.0	-100	17.5	183
268.5	-17	251.2	-17	311.1	20	164.2	82	0.0	-100	5.6	4
273.5	-15	252.1	-17	185.3	-29	82.5	-8	1.1	-86	0.3	-95

Source: CRIS, Hydromet division

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 Grant 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)	
							From	To	From	To
1	Sand	2	3	4	5	6	7	8	9	10
	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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	NA	NA	NA	NA	NA

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

**At Present time not any sand ghat operate in this District because hole lease has been expired.*

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

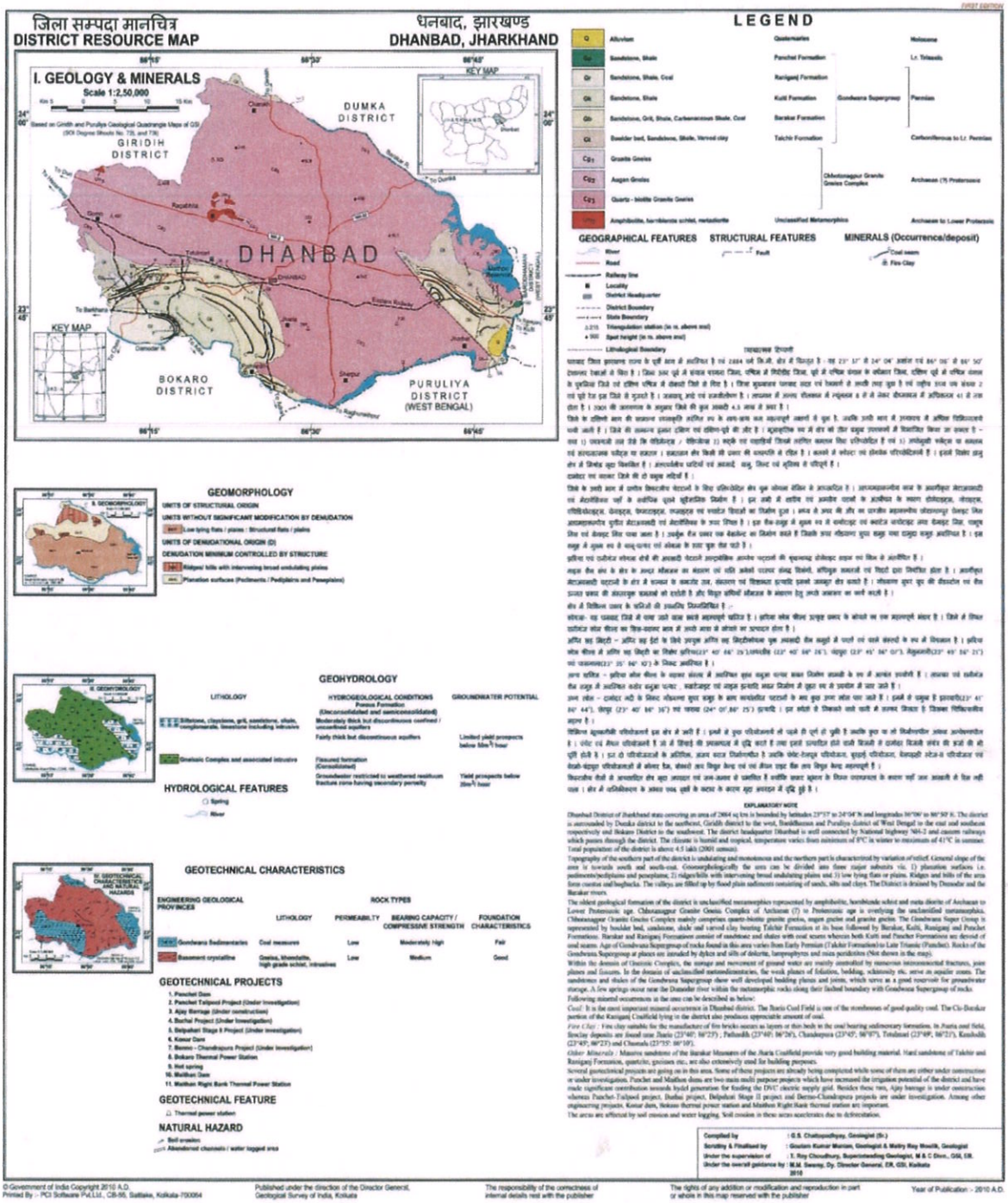
S.No	Years	Royalty/Revenue (In Rs.)
01	2021-2022	43,000
02	2020-2021	00
03	2019-2020	00
04	2018-2019	00
05	2017-2018	00
Total		**43,000**

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

S.NO	YEAR	PRODUCTION OF SAND IN CFT
01	2021-2022	6558293
02	2020-2021	6513792
03	2019-2020	2117526
04	2018-2019	19732158.53
05	2017-2018	16721406.25
TOTAL		**51643175.78**

*Data received from DMO Dhanbad.

CHAPTER- 12
MINERAL MAP OF THE DISTRICT



Mineral map of the District

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 of Intent Grant 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)	
								N	E
	Sand	2	3	4	5	6		9	10
1	NA	NA	NA	NA	NA	NA		NA	NA
2									

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

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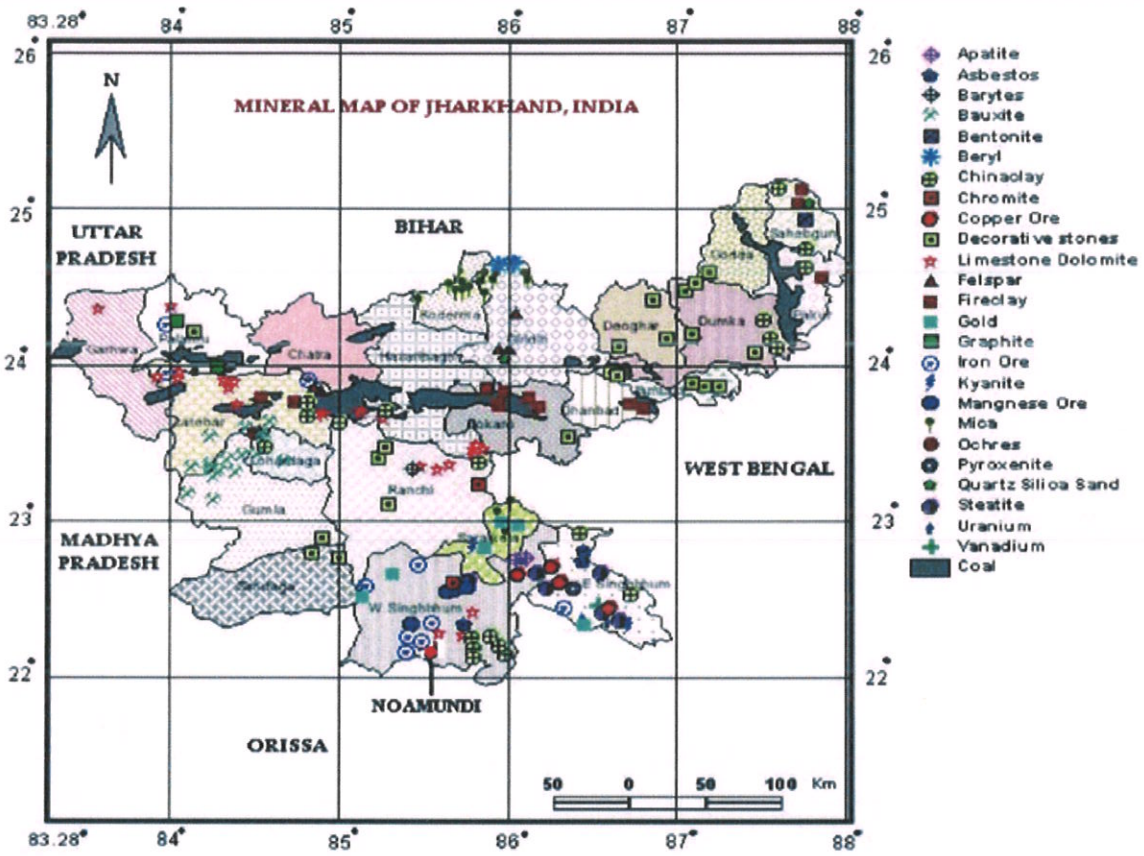
CHAPTER- 14
TOTAL MINERAL RESERVE AVAILABLE IN THE DISTRICT



Source: researchgate.net

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

Jharkhand state enjoys a strong position on the mineral map of the country. The state has potential deposits of energy, ferrous. non-ferrous, fertilizer, industrial, refractory, atomic, strategic, precious and semi-precious groups of minerals. The deposits of Coal. Iron ore, Baux1te, Uranium, Limestone, Dolomite, Pyroxenite, Quartz and Quartzite available in sufficient quantity In Jharkhand. The deposits of China Clay, Fireclay, Magnetite, Graphite, Kyanite, Feldspar, Mica& Decorative Stones are available in plenty. The deposits of Andalusite, Manganese, Chromite, Beryl, Talc, Gold, Bentonite are available in small quant1ty also.

Dhanbad is famous for its coal mines and industrial establishments; the city is surrounded by about 102 coal mines with a total production of 34 million tonne (approx).There are a number of coal washeries present there. The city Is also known for its power generation plants, Hydro power is generated at Maithon and Panchet, Tata Power and Damodar Valley Corporation (OVC) are setting up a 1050 MW thermal power plant at Maithon. ONGC is using CBM (Coal beded methane} for power generation at some areas.

Coal: Coal seams occur In the Jharia coalfield in two series of strata-Barakar series or the Lower coal measures and the Raniganj series or the upper coal measures. The Barakar series coal is generally coking and they contain a relatively higher proportion of fixed carbon and low percentage of volatiles and moisture than the Raniganj series coals. The better quality coals of the Barakar measures are excellent steam coal and form hard metallurgical coke.

Fire Clay: Fire-clay suitable for the manufacture of fire-bricks occurs as layers or thin beds in the coal-bearing sedimentary formations.

Clays: Brick earth is found in huge quantities throughout the district except in the hilly areas and sandy tract. Besides the above minerals. thin beds of good quality Industrial clays have also been found in Barakar formation exposed In the district.

Building Materials: Amongst the rocks used for building purposes in this area, the massive sandstones of the Barakar measures of the Jharia coalfield are good building material used In the construction of bridges and roads.

Sand used as building material is found In the River basin In Damodar and Barakar River and some in its tributaries.

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 canbe 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.

Dolomite: Dolomite as a mineral has very few uses. However, dolostone has an enormous

number of uses because it occurs in deposits that are large enough to mine.

The most common use for dolostone is in the construction industry. It is crushed and sized for use as a road base material, an aggregate in concrete and asphalt, railroad ballast, rip-rap, or fill. It is also calcined in the production of cement and cut into blocks of specific size known as "dimension stone."

Dolomite's reaction with acid also makes it useful. It is used for acid neutralization in the chemical industry, in stream restoration projects, and as a soil conditioner.

Dolomite is used as a source of magnesia (MgO), a feed additive for livestock, a sintering agent and flux in metal processing, and as an ingredient in the production of glass, bricks, and ceramics.

Dolomite serves as the host rock for many lead, zinc, and copper deposits. These deposits form when hot, acidic hydrothermal solutions move upward from depth through a fracture system that encounters a dolomitic rock unit. These solutions react with the dolomite, which causes a drop inpH that triggers the precipitation of metals from solution.

Dolomite also serves as an oil and gas reservoir rock. During the conversion of calcite to dolomite, a volume reduction occurs. This can produce pore spaces in the rock that can be filled with oil or natural gas that migrate in as they are released from other rock units. This makes the dolomite a reservoir rock and a target of oil and gas drilling.

Laterite: Major and sub-base materials for the construction of most highways and walls of residential houses in tropical and sub-tropical countries of the world. Laterite is a building material which can be used in construction from flooring to roof construction. The rising construction cost and drive towards locally available material have fuelled a demand for this product in recent years. In laterite areas where a high level of culture once prevailed, ruins often disclose laterite used as a building stone. Open cisterns, sewers, headwalls, culverts, flagstones, quays, moles, and breakwa- ters of laterite have functioned successfully for hundreds of years and laterite is also used in ceramic industries.

Uses of Coal:

Coal is seemingly the cheapest and most essential source of energy. Here is a list of all the major uses of coal.

Generating Electricity

Production of Steel

Industries

Gasification and Liquefaction

Domestic Use

Use of River Sand:

It falls under the fine quality of construction sands which are found near river banks and streams. This sand is white-gray and is one of the fine-graded sands used in the construction of buildings. They are mainly used in concrete and masonry work. They can also be used for RCC, plastering, and many other brick or block works. This sand consists of a smoother texture and a better shape of grains. The river or natural sand demands very less water. River sand since naturally obtained is cheaper.

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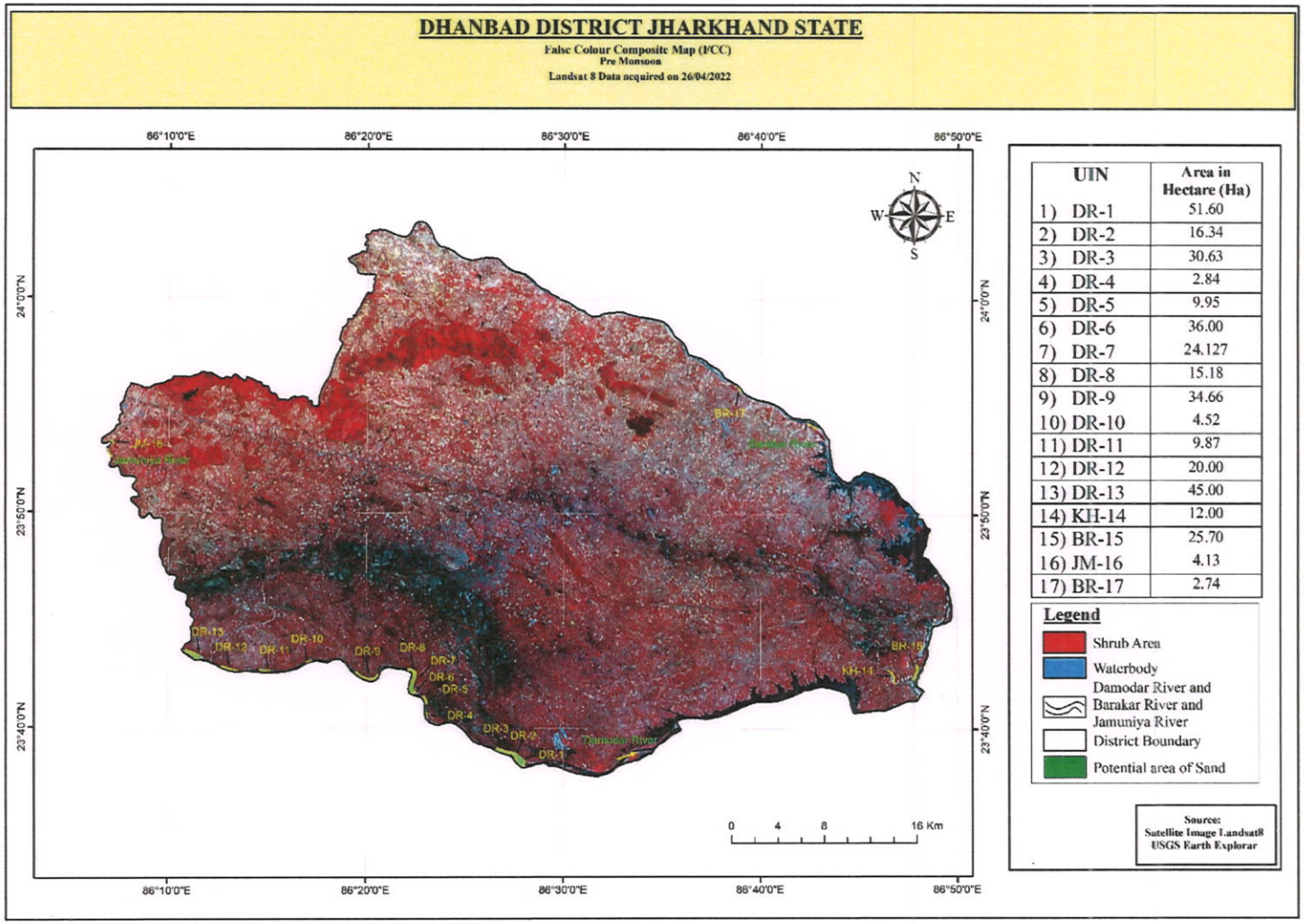
CHAPTER- 17
DEMAND AND SUPPLY OF THE MINERAL IN THE LAST FIVE YEARS

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 Dhanbad and nearby areas is increasing very fast. During last five in **Financial Year(F.Y)-2017-2018-16721406.25cft, F.Y-2018-2019-19732158.53cft, F.Y-2019-2020-2117526cft, F.Y-2020-2021-6513792cft, F.Y- 2021-2022-6558293cft.**

To fulfill the demand in the district, the sand ghats proposed for production of sand.

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



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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.

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.

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.

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There are some important key points of EM guildlines 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.

No riverbed mining will be allowed during the monsoon.

<u>Requirement for Monitoring & Enforcement</u>

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 depends 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 states.

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 tomaintain 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 ¾th part of the river; width needs to be identified on a map. Out of the ¾th part area, where there is a deposition/aggradation of the material needs to be identified. The remaining ¼th 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 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 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 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

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)
Damodar River	73	Perennial River
Khudia River	23	Non-Perennial River
Jamuniya River	27	Non-Perennial River
Barakar River	75	Perennial River

b) **DE-SILTATION LOCATION: (LAKES/PONDS/DAMS ETC.)**

Name of Reservoir/ Dams	Maintain/Controlled by State Govt./PSU etc.	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	AgriculturalLand(Yes/No)
Nil	Nil	Nil	Nil	Nil	Nil	Nil

d) **M-SAND PLANTS:**

PlantName	Owner	District	Tehsil	Village	Geo-location	QuantityTonnes/Annum
Nil	Nil	Nil	Nil	Nil	Nil	Nil

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/ RBM etc.)	Existing /Proposed
DR1	Damodar River Category-II ***SAIL CO&DFO Applied & Gazette enlist***	**Mauza-**Tasra **Anchal-**Jharia **Distt-**Dhanbad **Plot no.-**786 **Toposheet No-**73/6	51.60	**1)**23°38'47.77"N86°27'41.60"E **2)**23°38'41.52"N86°27'49.72"E **3)**23°38'33.80"N86°27'58.09"E **4)**23°38'29.35"N86°28'5.91"E **5)**23°38'12.56"N86°27'59.97"E **6)**23°38'25.69"N86°27'40.26"E **7)**23°38'34.33"N86°27'31.74"E ***Near West Bengal Border***	**Yes**	**Yes** Cluster No.-1	105450	Sand	***For sand stowing***
DR2	Damodar River Category-II ***SAIL CO&DFO Applied & Gazette enlist***	**Mauza-**Het Kandra **Anchal-**jharia **Distt-**Dhanbad **Plot no.-**785 **Toposheet No-**73/6	16.34	**1)**23°38'56.11"N86°27'22.07"E **2)**23°38'52.86"N86°27'34.24"E **3)**23°38'47.77"N86°27'41.60"E **4)**23°38'38.08"N86°27'34.49"E **5)**23°38'44.98"N86°27'27.50"E **6)**23°38'51.41"N86°27'20.40"E	**Yes**	**Yes** Cluster No.-1	33138	Sand	***For sand stowing***

DR3	Damodar River Category-II ***SAIL CO&DFO Applied & Gazette enlist***	**Mauza-**Chasnala **Anchal-**Jharia **Dist.-**Dhanbad **Plot no.-**960 ***As per C.O letter, Plot NO.-650*** **Toposheet No-**73/6	30.63	**1)** 23°39'7.87"N 86°26'37.75"E **2)**23°38'59.92"N 86°27'0.47"E **3)**23°38'56.11"N86°27'22.07"E **4)**23°38'46.41"N86°27'18.36"E **5)**23°38'52.87"N86°26'56.35"E **6)** 23°39'0.54"N 86°26'35.12"E	**Yes**	**Yes** Cluster No.-1	62357	Sand	***For sand stowing***
DR4	Damodar River Category-II	**Mauza-**Jahajtand(Bhowra) **Anchal-**Jharia **Dist.-**Dhanbad Khata No.-186 **Plot No.-**2752(P) **Toposheet No-**73/6	2.84	**1)**23°40'44.08"N 86°23'2.41"E **2)**23°40'43.94"N 86°23'5.37"E **3)**23°40'34.02"N 86°23'6.06"E **4)**23°40'33.67"N 86°23'2.83"E	**Yes**	No	12008	Sand	Proposed
DR5	Damodar River Category-II	**Mauza-Bhowra** **Anchal-**Jharia **Dist.-**Dhanbad Khata No.-186 **Plot No-**2235(P) 74(P) **Toposheet No.-** 73/6	9.95	**1)**23°41'7.34"N 86°23'0.47"E **2)**23°41'24.83"N86°22'54.36"E **3)**23°41'27.35"N86°22'51.45"E **4)**23°41'30.82"N86°22'54.09"E **5)**23°41'25.71"N86°22'59.16"E **6)** 23°41'7.64"N86°23'5.73"E ***Near Bokaro District Border***	**Yes**	No	42071	Sand	Proposed
DR6	Damodar River Category-II ***SAIL CO&DFO Applied & Gazette enlist***	**Mauza-**Dungrighat **Anchal-**Jharia **Khata No.-**126 **Plot no.-01** **Toposheet No.-** 73/6	36.0	**1)**23°42'7.94"N86°22'25.47"E **2)**23°41'53.14"N86°22'22.54"E **3)**23°41'42.15"N86°22'29.94"E **4)**23°41'35.08"N86°22'26.76"E **5)**23°41'37.14"N86°22'22.25"E **6)**23°41'35.34"N86°22'20.03"E **7)**23°41'40.52"N86°22'13.15"E **8)**23°41'53.39"N86°22'11.53"E **9)**23°42'11.90"N86°22'16.99"E	**Yes**	**Yes** Cluster No.-2	85212	Sand	***For sand stowing***

DR7	Damodar River Category-II ***Tata steel CO&DFO Completed***	**Mauza-**Dungri-Patia **Anchal-**Jharia **Distt-**Dhanbad Khata No.-126 **Plot no.-01** **Toposheet No.-** 73/6	24.127	**1)**23°42'38.69"N86°22'18.78"E **2)**23°42'11.94"N86°22'16.96"E **3)** 23°42'8.04"N86°22'25.49"E **4)**23°42'34.24"N86°22'32.51"E	**Yes**	**Yes** Cluster No.-2	56674	Sand	***For sand stowing***
DR8	Damodar River Category-II ***Tata steel CO&DFO Completed***	**Mauza-**Dungri-Petia **Anchal-**Putki **Distt-**Dhanbad Khata No.-201 **Plot no.-**1755New/ 736P(Old) **Toposheet No.-** 73/6	15.18	**1)**23°42'47.47"N86°22'6.16"E **2)**23°42'42.04"N86°22'27.45"E **3)**23°42'34.31"N86°22'32.51"E **4)**23°42'40.66"N86°22'6.45"E	**Yes**	**Yes** Cluster No.-2	35658	Sand	***For sand stowing***
DR9	Damodar River Category-II ***Tetangabad tata steel CO&DFO Completed***	**Mauza-** Tetangabad **Anchal-**Putki **Khata No-**15 **Plot No.-**253(P) **Dist.-**Dhanbad **Toposheet No.-** 73/6	34.66	**1)**23°42'28.51"N86°20'38.01"E **2)**23°42'20.67"N86°20'33.18"E **3)**23°42'18.41"N86°19'58.54"E **4)**23°42'34.65"N86°19'26.16"E **5)**23°42'37.69"N86°19'31.09"E **6)**23°42'21.47"N86°19'59.43"E **7)**23°42'25.62"N86°20'30.35"E **8)**23°42'31.75"N86°20'33.33"E	**Yes**	No	82040	Sand	***For sand stowing***
DR10	Damodar River Category-II	**Mauza-**Singra **Anchal-**Baghmara **Dist.-**Dhanbad **Plot No.-**2283(P) or 6158(P) **Toposheet No.-** 73/6	4.52	**1)**23°43'1.65"N 86°16'59.13"E **2)**23°43'4.08"N 86°16'57.52"E **3)**23°43'10.69"N86°17'13.91"E **4)**23°43'7.45"N 86°17'15.25"E	**Yes**	No	9910	Sand	Proposed

DR11	Damodar River Category-II	**Mauza-**Nagda **Anchal-**Baghmara **Dist.-**Dhanbad **Plot No.-**1574(P) **Toposheet No.-**73/12	9.87	**1)**23°42'40.68"N86°14'36.11"E **2)**23°42'43.75"N86°14'38.18"E **3)**23°42'40.89"N86°14'46.23"E **4)**23°42'40.26"N86°14'52.94"E **5)**23°42'41.85"N 86°15'8.29"E **6)**23°42'39.16"N 86°15'8.64"E	**Yes**	No	10861	Sand	Proposed
DR12	Damodar River Category-II	**Mauza-**Telmocho **Anchal-**Baghmara **Dist.-**Dhanbad **Plot No.-**3596 (P) **Toposheet No.-**73/12	20.0	**1)**23°42'48.58"N86°12'39.32"E **2)**23°42'53.31"N86°12'42.16"E **3)**23°42'40.09"N86°13'30.57"E **4)**23°42'36.94"N86°13'30.52"E	**No**	No	147768	Sand	Proposed
DR13	Damodar River Category-II	**Mauza-**Lohpiti **Anchal-**Baghmara **Dist.-**Dhanbad **Plot No.-**3399(P) **Toposheet No.-**73/12	45.0	**1)** 23°43'9.92"N 86°11'31.41"E **2)**23°43'21.23"N86°11'36.26"E **3)**23°43'37.53"N86°10'53.50"E **4)**23°43'35.14"N86°10'44.23"E **5)**23°43'11.12"N86°11'20.02"E ***Near Bokaro District Border***	**No**	No	447363	Sand	Proposed
KH14	Khudia River Category-II	**Mauza-**Jajalpur **Anchal-** Keliasol **Plot No.-**370(P), 413(P), (As per C.O Letter Khata. No.77, Plot No.-108/413) **Dist.-**Dhanbad **Toposheet No.**73/14	9.81	**1)** 23°42'42.24"N 86°46'35.40"E **2)**23°42'41.59"N 86°46'37.04"E **3)**23°42'29.69"N 86°46'47.28"E **4)**23°42'11.31"N 86°46'50.16"E **5)**23°42'8.49"N 86°46'48.27"E **6)**23°42'27.81"N 86°46'44.16"E **7)**23°42'36.65"N 86°46'39.03"E **8)** 23°42'39.78"N 86°46'34.92"E	**Yes**	NO	77107	Sand	Proposed
BR15	Barakar River Category-II	**Mauza-**Dumarkunda **Anchal-**Egarkunda **Dist.-**Dhanbad **Plot No.-** *(As per C.O. Khata no.309, Plot No.-3958 Khata No.-523, Plot-3806/4142, 3806/4143,*	25.7	**1)**23°42'59.79"N86°47'55.16"E **2)**23°42'51.35"N 86°48'3.45"E **3)**23°42'17.39"N86°47'49.37"E **4)**23°42'19.36"N86°47'42.61"E ***Near West Bengal Border***	**Yes**	NO	347443	Sand	Proposed

		3796/4144, 3805/4145, 3805/4148) **Toposheet No.**73/14							
JM16	Jamuniya River Category -II	**Mauza-**Hariharpur **Anchal-**Topchanchi **Dist.-**Dhanbad **Plot No.-**5304(P) **Toposheet No.-**73/1	4.13	**1)**23°53'17.24"N 86° 7'3.56"E **2)**23°53'18.99"N 86° 7'2.77"E **3)**23°53'20.06"N 86° 7'8.99"E **4)**23°53'12.04"N 86° 7'11.68"E **5)**23°53'6.74"N 86° 7'5.91"E **6)**23°53'8.24"N 86° 7'4.94"E **7)**23°53'12.34"N 86° 7'9.46"E **8)**23°53'17.76"N 86° 7'6.83"E *Near Bokaro District Border*	**Yes**	NO	7114	Sand	Proposed
BR17	Barakar River Category-II	**Mauza-**Panrua **Anchal-** Purvi Tundi **Plot No.-** 2455(P) **Dist.-** Dhanbad	2.74	**1)** 23°55'54.14"N 86°38'50.27"E **2)** 23°55'55.70"N 86°38'52.86"E **3)** 23°55'44.91"N 86°39'0.83"E **4)** 23°55'43.96"N 86°38'59.46"E	**No**	NO	6461	Sand	Proposed
Total Area			**343.09**				**1568635**		

- **Regarding DSR Sand not any comments received from Public.**

Category-I Proposed Sand Mining Ghats					
S.No	**Name of River**	**Details**	**Geo-Coordinate**	**Area in Ha.**	**Remarks**
1	Barakar River Category-I	**Mauza-** Dumarkunda **Block-**Nirsa **Thana No-** **Plot No.-** **Dist.-**Dhanbad	**1)** 23°43'50.87"N 86°48'15.89"E **2)** 23°43'49.78"N 86°48'19.30"E **3)** 23°43'26.29"N 86°48'9.27"E **4)** 23°43'27.96"N 86°48'5.37"E	**9.15**	**Sand deposit are not good and Near Bridge 0.41km**
2	Khudia River Category-I	**Mauza-** GOLPHALBARI **Block-**Nirsa **Thana No-**0231 **Plot No.-**1577(P) **Dist.-**Dhanbad	**1)** 23°44'6.41"N 86°45'51.83"E **2)** 23°44'8.17"N 86°45'53.16"E **3)** 23°43'58.32"N 86°46'4.20"E **4)** 23°43'57.21"N 86°46'2.73"E	**2.66**	**Sand deposit are not good**
3	Khudia River Category-I	**Mauza-** GOPINATHPUR **Block-**Nirsa **Thana No-**0065 **Plot No.-**1 (P) **Dist.-**Dhanbad	**1)** 23°44'20.25"N 86°45'16.74"E **2)** 23°44'17.51"N 86°45'26.16"E **3)** 23°44'16.57"N 86°45'25.97"E 4)	**0.93**	**Sand deposit are not good**
4	Barakar River Category-I	**Mauza-** Maradi-I **Block-** Nirsa **Thana No-**0004 **Plot No.-**16(P) **Dist.-** Dhanbad	**1)** 23°55'9.30"N 86°40'23.03"E **2)** 23°55'10.84"N 86°40'24.46"E **3)** 23°55'1.71"N 86°40'45.66"E **4)** 23°55'0.07"N 86°40'43.98"E	**4.24**	**Sand deposit are not good**
5	Barakar River Category-I	**Mauza-**Maradi-II **Block-** Nirsa **Thana No-**0004 **Plot No.-**2(P),16(P) **Dist.-** Dhanbad	**1)** 23°54'49.95"N 86°40'58.28"E **2)** 23°54'51.80"N 86°41'0.79"E **3)** 23°54'38.20"N 86°41'14.85"E **4)** 23°54'36.61"N 86°41'12.56"E	**4.96**	**Sand deposit are not good**
6	Barakar River	**Mauza-**Panrrabejra	**1)** 23°55'18.65"N 86°39'43.65"E	**3.64**	**Sand deposit**

	Category-I	**Block-** Nirsa **Thana No-**0001 **Plot No.-**3216(P), 3045(P) **Dist.-** Dhanbad	**2)** 23°55'21.34"N 86°39'44.52"E **3)** 23°55'16.80"N 86°39'59.96"E **4)** 23°55'14.78"N 86°39'59.20"E		**are not good and near river confluence**
7	Barakar River Category-I	**Mauza-**Mahlidi **Block-**Tundi **Thana No-**0274 **Plot No.-**3563(P), **Dist.-** Dhanbad	**1)** 23°56'39.95"N 86°37'45.08"E **2)** 23°56'43.02"N 86°37'48.14"E **3)** 23°56'34.74"N 86°37'57.92"E **4)** 23°56'33.82"N 86°37'56.45"E	**4.43**	**Pocket Deposit in Boulders**
8	Barakar River Category-I	**Mauza-**Guliadi **Block-**Tundi **Thana No-**0011 **Plot No.-**357(P), **Dist.-** Dhanbad	**1)** 23°57'12.93"N 86°36'53.69"E **2)** 23°57'15.58"N 86°36'54.99"E **3)** 23°57'6.66"N 86°37'12.80"E **4)** 23°57'4.42"N 86°37'11.39"E	**4.85**	**Pocket Deposit in Boulders**
9	Barakar River Category-I	**Mauza-**Bejdi **Block-**Tundi **Thana No-**0214 **Plot No.-**2(P).1(P) **Dist.-** Dhanbad	**1)** 23°58'42.04"N86°35'11.85"E **2)** 23°58'43.69"N 86°35'14.12"E **3)** 23°58'28.03"N 86°35'26.14"E **4)** 23°58'26.63"N 86°35'23.09"E	**4.80**	**Pocket Deposit in Boulders**
10	Barakar River Category-I	**Mauza-**Ghurnibera **Block-**Tundi **Thana No-**0210 **Plot No.-**725(P), 726(P) **Dist.-** Dhanbad	**1)** 23°59'19.63"N 86°32'41.74"E **2)** 23°59'23.47"N 86°32'41.59"E **3)** 23°59'21.76"N 86°32'55.24"E **4)** 23°59'19.27"N 86°32'55.27"E	**3.92**	**Sand deposit are not good and Near Bridge 0.38km**
11	Barakar River Category-I	**Mauza-**Lukuya **Block-**Tundi **Thana No-**0110 **Plot No.-**200(P) **Dist.-** Dhanbad	**1)** 23°59'26.54"N 86°30'41.90"E **2)** 23°59'29.56"N 86°30'42.82"E **3)** 23°59'25.69"N 86°30'56.35"E **4)** 23°59'22.74"N 86°30'54.74"E	**4.25**	**Pocket Deposit in Boulders**
12	Barakar River Category-I	**Mauza-**Madhursa Alias **Block-**Tundi **Thana No-**0104 **Plot No.-**01(P)	**1)** 24° 1'6.21"N 86°27'58.39"E **2)** 24° 1'8.06"N 86°28'0.55"E **3)** 24° 0'57.79"N 86°28'10.46"E **4)** 24° 0'55.78"N 86°28'9.43"E	**3.28**	**Sand deposit are not good and Near Bridge**

		Dist.- Dhanbad			**0.42km**
13	Barakar River Category-I	**Mauza-**Panredi **Block-**Tundi **Thana No-**0037 **Plot No.-**506(P), 369(P),1(P) **Dist.-** Dhanbad	**1)** 24° 1'46.21"N 86°26'35.83"E **2)** 24° 1'49.61"N 86°26'37.49"E **3)** 24° 1'39.08"N 86°26'50.03"E **4)** 24° 1'37.48"N 86°26'47.46"E	**4.55**	**Sand deposit are not good and near habitation**
14	Barakar River Category-I	**Mauza-**Sarra **Block-**Tundi **Thana No-**0001 **Plot No.-**1230(P) **Dist.-** Dhanbad	**1)** 24° 3'5.18"N 86°21'8.32"E **2)** 24° 3'6.52"N 86°21'9.13"E **3)** 24° 2'58.74"N 86°21'26.12"E **4)** 24° 2'57.63"N 86°21'25.22"E	**2.51**	**Sand deposit are not good and Near Bridge 0.38km**
15	Damodar River Category-I	**Mauza-**Mahuda **Block-**Baghmara **Thana No-**0342 **Plot No.-**1446(P) **Dist.-** Dhanbad	**1)** 23°42'43.57"N 86°16'15.20"E **2)** 23°42'45.19"N 86°16'14.51"E **3)** 23°42'52.08"N 86°16'30.43"E **4)** 23°42'50.13"N 86°16'30.74"E	**2.90**	**Near forest area and approach road not good**
16	Barakar River Category-I	**Mauza-**Baramuri **Block-**Nirsa **Thana No.-**249 **Plot No.-**1042(P) **District-**Dhanbad	**1)** 23°45'9.35"N 86°49'20.63"E **2)** 23°45'6.45"N 86°49'21.64"E **3)** 23°44'59.20"N 86°49'10.79"E **4)** 23°45'1.44"N 86°49'8.19"E	**3.1**	***Approach road not available for this sand ghat***

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 (MT) 60%	Existing /Proposed
SAIL	DR-1	51.60	Dhanbad	Jharia	Tasra	175750	105450	For sand stowing
SAIL	DR-2	16.34	Dhanbad	Jharia	Het Kandra	55229	33138	For sand stowing
SAIL	DR-3	30.63	Dhanbad	Jharia	Chasnala	103928	62357	For sand stowing
JSMDC	DR-4	2.84	Dhanbad	Jharia	Jahajtand (Bhawra)	20013	12008	Proposed
JSMDC	DR-5	9.95	Dhanbad	Jharia	Bhawra	70118	42071	Proposed
SAIL	DR-6	36.00	Dhanbad	Jharia	Dunrighat	142020	85212	For sand stowing
TATA STEEL	DR-7	24.127	Dhanbad	Putki	Dungri-Patia	94457	56674	For sand stowing
TATA STEEL	DR-8	15.18	Dhanbad	Putki	Dungri-Petia	59430	35658	For sand stowing
TATA STEEL	DR-9	34.66	Dhanbad	Putki	Tetangabad	136734	82040	For sand stowing
JSMDC	DR-10	4.52	Dhanbad	Baghmara	Singra	16516	9910	Proposed
JSMDC	DR-11	9.87	Dhanbad	Baghmara	Nagda	18102	10861	Proposed
JSMDC	DR-12	20.00	Dhanbad	Baghmara	Telmocho	246280	147768	Proposed
JSMDC	DR-13	45.00	Dhanbad	Baghmara	Lohpiti	745605	447363	Proposed

JSMDC	KH-14	9.81	Dhanbad	Keliasol	Jajalpur	128511	77107	Proposed
JSMDC	BR-15	25.70	Dhanbad	Egarkunda	Dumarkunda	579072	347443	Proposed
JSMDC	JM-16	4.13	Dhanbad	Topchanchi	Hariharpur	11857	7114	Proposed
JSMDC	BR-17	2.74	Dhanbad	Purvi Tundi	Panrua	10768	6461	Proposed
Total Area		**343.10**				**2614390**	**1568635**	

2) **DE-SILTATION LOCATION:(LAKES/PONDS/DAMS ETC.) (EXISTING & PROPOSED)**

Name of Reservoir/Dams	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/Annum	Existing/Proposed
NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL

ANNEXURE-III

CLUSTER & CONTIGUOUS CLUSTER DETAILS

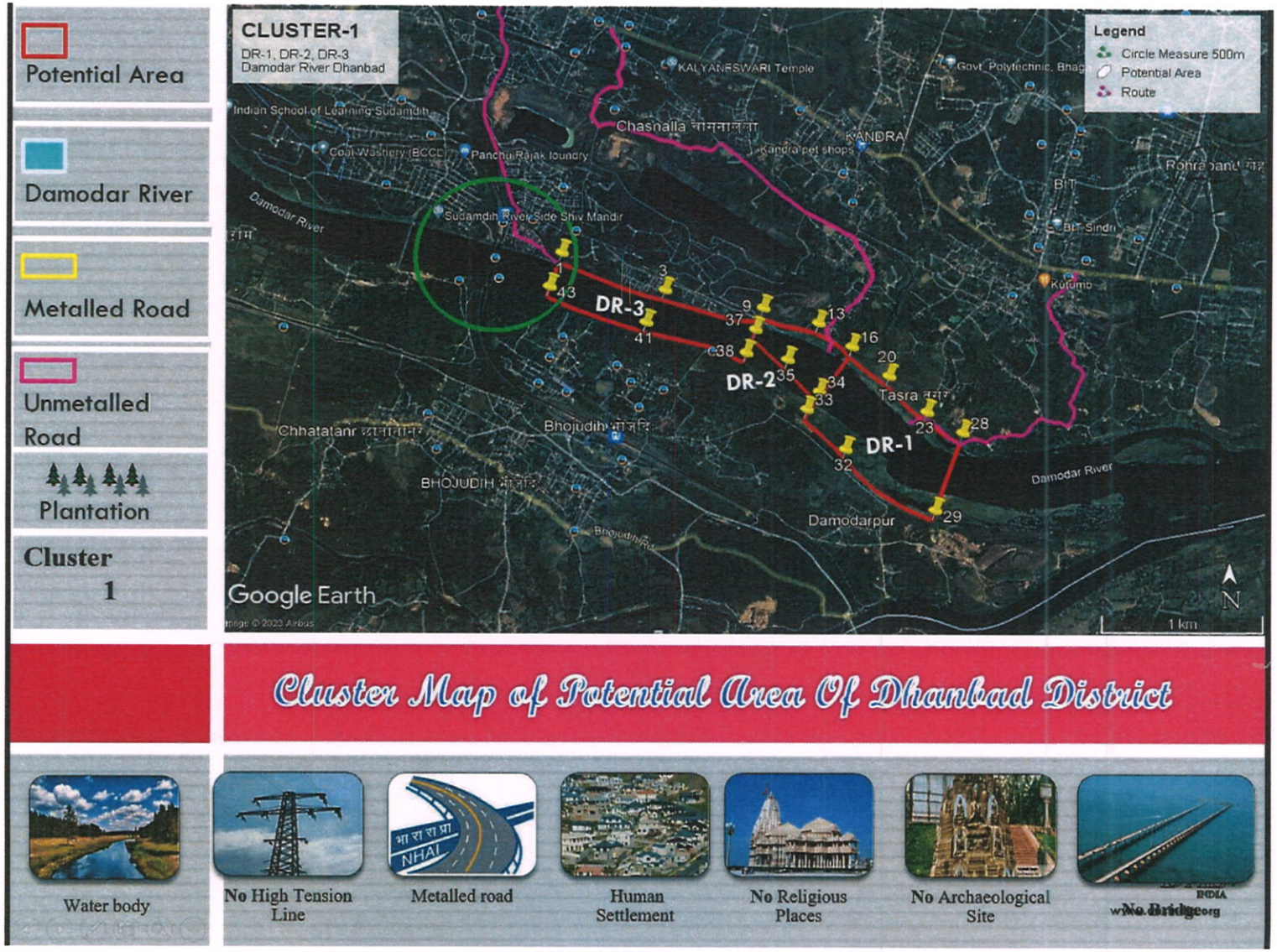
1) CLUSTERS:

River Name	Cluster No.	Lease No	Geo-Coordinates	Village	Area (in Ha)	Total Mineral Excavation (Ton)
Damodar River	01	DR1	1)23°38'47.77"N86°27'41.60"E 2)23°38'41.52"N86°27'49.72"E 3)23°38'33.80"N86°27'58.09"E 4)23°38'29.35"N86°28'5.91"E 5)23°38'12.56"N86°27'59.97"E 6)23°38'25.69"N86°27'40.26"E 7)23°38'34.33"N86°27'31.74"E	**Mauza-**Tasra **Anchal-**Jharia **Distt-**Dhanbad **Plot no.-**786	51.60	105450
Damodar River		DR2	1)23°38'56.11"N86°27'22.07"E 2)23°38'52.86"N86°27'34.24"E 3)23°38'47.77"N86°27'41.60"E 4)23°38'38.08"N86°27'34.49"E 5)23°38'44.98"N86°27'27.50"E 6)23°38'51.41"N86°27'20.40"E	**Mauza-**Het Kandra **Anchal-**jharia **Distt-**Dhanbad **Plot no.-**785	16.34	33138
Damodar River		DR3	1)23°39'7.87"N 86°26'37.75"E 2)23°38'59.92"N 86°27'0.47"E 3)23°38'56.11"N86°27'22.07"E 4)23°38'46.41"N86°27'18.36"E 5)23°38'52.87"N86°26'56.35"E 6) 23°39'0.54"N 86°26'35.12"E	**Mauza-**Chasnala **Anchal-**Jharia **Dist.-**Dhanbad **Plot no.-**960 ***As per C.O letter, Plot NO.-650***	30.63	62357

Damodar River	02	DR6	**1)**23°42'7.94"N86°22'25.47"E **2)**23°41'53.14"N86°22'22.54"E **3)**23°41'42.15"N86°22'29.94"E **4)**23°41'35.08"N86°22'26.76"E **5)**23°41'37.14"N86°22'22.25"E **6)**23°41'35.34"N86°22'20.03"E **7)**23°41'40.52"N86°22'13.15"E **8)**23°41'53.39"N86°22'11.53"E **9)**23°42'11.90"N86°22'16.99"E	**Mauza-**Dungrighat **Anchal-**Jharia **Khata No.-**126 **Plot no.-01**	36.0	85212
Damodar River		DR7	**1)**23°42'38.69"N86°22'18.78"E **2)**23°42'11.94"N86°22'16.96"E **3)** 23°42'8.04"N86°22'25.49"E **4)**23°42'34.24"N86°22'32.51"E	**Mauza-**Dungri-Patia **Anchal-**Jharia **Distt-**Dhanbad Khata No.-126 **Plot no.-01**	24.127	56674
Damodar River		DR8	**1)**23°42'47.47"N86°22'6.16"E **2)**23°42'42.04"N86°22'27.45"E **3)**23°42'34.31"N86°22'32.51"E **4)**23°42'40.66"N86°22'6.45"E	**Mauza-**Dungri-Petia **Anchal-**Putki **Distt-**Dhanbad Khata No.-201 **Plot no.-**1755New/736P(Old)	15.18	35658
Total					**173.877**	**378489**

Atmos Sustainable Solutions P. Ltd.

State Level Environment Impact Assessment Authority ★ Jharkhand, Ranchi ★ Approved



Atmos Sustainable Solutions P. Ltd.
State Level Environment Impact Assessment Authority * Jharkhand, Ranchi *
Approved

Atmos Sustainable Solutions P. Ltd.
State Level Environment Impact Assessment Authority * Jharkhand, Ranchi *
Approved

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 Constructed byGovt/ Lease Owner	Route Map & Location
DR-1	01	132	132	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
DR -2	02	41	41	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
DR -3	03	78	78	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
DR -4	04	15	15	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
DR -5	05	53	53	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
DR -6	06	107	107	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
DR -7		71	71	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached

DR -8	07	45	45	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
DR -9	08	103	103	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
DR -10	09	12	12	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
DR -11	10	14	14	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
DR -12	11	185	185	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
DR -13	12	559	559	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
KH -14	13	96	96	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
BR -15	14	434	434	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
JM -16	15	9	9	Detail Attached Below	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached
BR -17	16	8	8	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
DR1	Village road-2.40 km	Tasra Basti – Rohrabandh basti
	MDR	Deuli – Khairpal Road
DR2	Village road- 3.58 km	Hetkandra- Chasnalla
	MDR	Deuli – Khairpal Road
DR3	Village road- 2.13 km	chasnalla
	MDR	Dhanbad- Sindri Road
DR4	Village road- 1.67 km	Jahajtand-Bhowra
	MDR	Jamadoba- Bhowra Road
DR5	Village road-3.59 km	Kalimela-Jamadoba
	MDR	Jamadoba- Bhowra Road
DR6	Village road-4.52 km	Kalimela- Jitpur-Niche Dungri basti-Jamadoba
	MDR	Jamadoba- Bhowra Road
DR7	Village road- 3.58 km	Jitpur-Jamadoba
	MDR	Jamadoba- Bhowra Road
DR8	Village road-4.27 km	Petia-Kenduadih
	MDR	Putki-Bhaga Road
DR9	Village road-7.35 km	Tetangabad-Karitanr-Baludih-Moonidih-Putki
	NH18	Dhanbad Road
DR10	Village road- 0.46 km	Mahuda
	MDR	Barki- Nagda Road
DR11	Village road- 0.84 km	Nagda
	MDR	Kunji-Mahuda Road
DR12	Village road- 0.58 km	Kunji
	MDR	Talmuchu-Nagda Road
DR13	Village road- 1.43 km	Lohpiti
	NH18	Dhanbad Road

KH14	Village road- 2.31 km	Jajalpur-Chanch
	MDR	Puruliya-Chirkunda Road
BR15	Village road-2.70 km	Dumarkunda-Chirkunda
	MDR	Puruliya-Chirkunda Road
JM16	Village road- 1.79 km	Hariharpur
	MDR	Harihrpur –Singdih Road
BR17	Village road-1.1 km	Panrua
	NH419	Gobindpur –Jamtara Road

Cluster No	Transportation Route No	Number of tractor/day of cluster	Number of tractors/day of all the clusters on route	Length of Route in KM	Type of Road (Black Topped/ unpaved)	Recommendation for road (Black Topped/ unpaved)	The road will be Constructed by Govt/ Lease Owner	Route Map & Location
01	06 (DR6 & DR7)	178	178	4.52km & 3.58km	Unpaved	Sprinkling will be done on unpaved road	Lease owner	Attached

LIST OF SAND GHAT(EXISTING & PROPOSED)

River Name	Lease Details	Name of Sand Ghat	Khata No. & Plot No.	Geo-Coordinates	Mining Leases within 500m (if yes Cluster 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
Damodar River	**Mauza-**Tasra Anchal-Jharia Districtt-Dhanbad	Tasra Sand Ghat	**Plot No.**-786	1)23°38'47.77"N 86°27'41.60"E 2)23°38'41.52"N 86°27'49.72"E 3)23°38'33.80"N 86°27'58.09"E 4)23°38'29.35"N 86°28'5.91"E 5)23°38'12.56"N 86°27'59.97"E 6)23°38'25.69"N 86°27'40.26"E 7)23°38'34.33"N 86°27'31.74"E	**Yes (Cluster No.-1)**	**51.60**	**958.72 x 538.22 x 0.13**	**2.62**	67080	175750	105450
Damodar River	**Mauza-**Het Kandra Anchal-Jharia Distt-Dhanbad	Het Kandra Sand Ghat	**Plot No.** - 785	1)23°38'56.11"N 86°27'22.07"E 2)23°38'52.86"N 86°27'34.24"E 3)23°38'47.77"N 86°27'41.60"E 4)23°38'38.08"N 86°27'34.49"E 5)23°38'44.98"N 86°27'27.50"E 6)23°38'51.41"N 86°27'20.40"E	**Yes (Cluster No.-1)**	**16.34**	**570.67 x 286.33 x 0.13**	**2.60**	21242	55229	33138
Damodar River	**Mauza -** Chasnala Anchal- Jharia District-Dhanbad	Chasnala Sand Ghat	**Plot No.** 960, (*650 As per C.O. letter*)	1) 23°39'7.87"N 86°26'37.75"E 2)23°38'59.92"N 86°27'0.47"E 3)23°38'56.11"N 86°27'22.07"E 4)23°38'46.41"N 86°27'18.36"E 5)23°38'52.87"N 86°26'56.35"E 6) 23°39'0.54"N 86°26'35.12"E	**Yes (Cluster No.-1)**	**30.63**	**1305.87x 234.56 x 0.13**	**2.61**	39819	103928	62357
Damodar River	**Mauza-** Jahajtand (Bhawra) Anchal-Jharia District-Dhanbad	Jhajtand (Bhavra) Sand Ghat	**Khata No.**-186 **Plot No.**-2752(P)	1)23°40'44.08"N 86°23'2.41"E 2)23°40'43.94"N 86°23'5.37"E 3)23°40'34.02"N 86°23'6.06"E 4)23°40'33.67"N 86°23'2.83"E	**No**	**2.84**	**265.65 x 106.91 x 0.27**	**2.61**	7668	20013	12008
Damodar River	**Mauza-** Bhowra Anchal- Jharia District-Dhanbad	Bhowra Sand Ghat	**Khata No.**-186 **Plot No.**-2235(P) **Plot No.**-74(P)	1)23°41'7.34"N 86°23'0.47"E 2)23°41'24.83"N 86°22'54.36"E 3)23°41'27.35"N 86°22'51.45"E 4)23°41'30.82"N 86°22'54.09"E 5)23°41'25.71"N 86°22'59.16"E 6) 23°41'7.64"N 86°23'5.73"E	**No**	**9.95**	**755.28 x 131.74 x 0.27**	**2.61**	26865	70118	42071
Damodar River	**Mauza-** Dungrighat, (***Dungri as***	Dungri Sand Ghat	**Khata No.**-126 **Plot No.**- 01	1)23°42'7.94"N 86°22'25.47"E 2)23°41'53.14"N 86°22'22.54"E 3)23°41'42.15"N 86°22'29.94"E	**Yes (Cluster No.-2)**	**36.00**	**1094.8x 328.83 x 0.15**	**2.63**	54000	142020	85212

	per C.O. letter) Anchal- Jharia District- Dhanbad			4)23°41'35.08"N 86°22'26.76"E 5)23°41'37.14"N 86°22'22.25"E 6)23°41'35.34"N 86°22'20.03"E 7)23°41'40.52"N 86°22'13.15"E 8)23°41'53.39"N 86°22'11.53"E 9)23°42'11.90"N 86°22'16.99"E							
Damodar River	**Mauza-** Dungri-Patia Anchal-Putki District- Dhanbad	Dungri-Patia Sand Ghat	**Khata No.-**126 **Plot No.-** 01	1)23°42'38.69"N 86°22'18.78"E 2)23°42'11.94"N 86°22'16.96"E 3) 23°42'8.04"N 86°22'25.49"E 4)23°42'34.24"N 86°22'32.51"E	**Yes (Cluster No.-2)**	**24.127**	**821.54x 239.68 x 0.15**	**2.61**	36191	94457	56674
Damodar River	**Mauza-** Dumgri-Petia, (***Petia as per C.O. letter***) Anchal- Putki District- Dhanbad	Dungri-Petia Sand Ghat	**Khata No.-**201 **Plot No.-**1755 (New), 736P (Old)	1)23°42'47.47"N 86°22'6.16"E 2)23°42'42.04"N 86°22'27.45"E 3)23°42'34.31"N 86°22'32.51"E 4)23°42'40.66"N 86°22'6.45"E	**Yes (Cluster No.-2)**	**15.18**	**636.69 x 238.42 x 0.15**	**2.61**	22770	59430	35658
Damodar River	**Mauza-** Tetangabad, Anchal- Putki District- Dhanbad	Tetangabad Sand Ghat	**Khata No.-**15 **Plot No.-**253(P)	1)23°42'28.51"N 86°20'38.01"E 2)23°42'20.67"N 86°20'33.18"E 3)23°42'18.41"N 86°19'58.54"E 4)23°42'34.65"N 86°19'26.16"E 5)23°42'37.69"N 86°19'31.09"E 6)23°42'21.47"N 86°19'59.43"E 7)23°42'25.62"N 86°20'30.35"E 8)23°42'31.75"N 86°20'33.33"E	**No**	**34.66**	**2438.83x 142.12 x 0.15**	**2.63**	51990	136734	82040
Damodar River	**Mauza-** Singra, Anchal- Baghmara District- Dhanbad	Singra Sand Ghat	**Plot No.-**2283 (*As per C.O. letter-* ***Plot No.-****6158*)	1)23°43'1.65"N 86°16'59.13"E 2)23°43'4.08"N 86°16'57.52"E 3)23°43'10.69"N 86°17'13.91"E 4)23°43'7.45"N 86°17'15.25"E	**No**	**4.52**	**406.18x 111.28 x 0.14**	**2.61**	6328	16516	9910
Damodar River	**Mauza-** Nagda, Anchal- Baghmara District- Dhanbad	Nagda Sand Ghat	**Plot No.-**1574(P)	1)23°42'40.68"N86°14'36.11"E 2)23°42'43.75"N86°14'38.18"E 3)23°42'40.89"N86°14'46.23"E 4)23°42'40.26"N86°14'52.94"E 5)23°42'41.85"N 86°15'8.29"E 6)23°42'39.16"N 86°15'8.64"E	**No**	**9.87**	**790.95 x 124.79 x 0.07**	**2.62**	6909	18102	10861
Damodar River	**Mauza-** Telmocho, Anchal- Baghmara District- Dhanbad	Telmocho Sand Ghat	**Plot No.-**3596(P)	1)23°42'48.58"N86°12'39.32"E 2)23°42'53.31"N86°12'42.16"E 3)23°42'40.09"N86°13'30.57"E 4)23°42'36.94"N86°13'30.52"E	**No**	**20.00**	**1180.39 x 169.44 x 0.47**	**2.62**	94000	246280	147768
Damodar	**Mauza-**	Lohpiti Sand	**Plot No.-**3399(P)	1) 23°43'9.92"N 86°11'31.41"E	**No**	**45.00**	**1168.9 x 384.98x 0.63**	**2.63**	283500	745605	447363

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River	Lohpiti, Anchal-Baghmara District-Dhanbad	Ghat		2)23°43'21.23"N86°11'36.26"E 3)23°43'37.53"N86°10'53.50"E 4)23°43'35.14"N86°10'44.23"E 5)23°43'11.12"N86°11'20.02"E							
Khudia River	**Mauza-** Jajalpur Anchal-Kaliasole District-Dhanbad	Jajalpur Sand Ghat	**Plot No.- 370(P) & 413** *As per C.O. letter* **Khata No.**-77 (New) **Plot No.-** 108/413	1) 23°42'42.24"N 86°46'35.40"E 2)23°42'41.59"N 86°46'37.04"E 3)23°42'29.69"N 86°46'47.28"E 4)23°42'11.31"N 86°46'50.16"E 5)23°42'8.49"N 86°46'48.27"E 6)23°42'27.81"N 86°46'44.16"E 7)23°42'36.65"N 86°46'39.03"E 8) 23°42'39.78"N 86°46'34.92"E	**No**	**9.81**	**949.54 x 126.35 x 0.50**	**2.62**	49050	128511	77107
Barakar River	**Mauza-** Dumarkunda, Anchal-Egarkunda District-Dhanbad	Dumarkunda Sand Ghat	[As per co letter-**Khata No.(old)**-309 **Plot No.(old)**- 3958 **Khata No.(new)**-532 **Plot No.(new)**- 3806/4142, 3806/4143,3796/4144, 3805/4145, 3805/4148]	1)23°42'59.79"N86°47'55.16"E 2)23°42'51.35"N 86°48'3.45"E 3)23°42'17.39"N86°47'49.37"E 4)23°42'19.36"N86°47'42.61"E	**No**	**25.70**	**1261.7x 203.69 x 0.86**	**2.62**	221020	579072	347443
Jamuniya River	**Mauza-** Hriharpur, Anchal-Topchanchi District-Dhanbad	Hariharpur Sand Ghat	**Plot No.**-5304(P)	1)23°53'17.24"N 86° 7'3.56"E 2)23°53'18.99"N 86° 7'2.77"E 3)23°53'20.06"N 86° 7'8.99"E 4)23°53'12.04"N 86° 7'11.68"E 5)23°53'6.74"N 86° 7'5.91"E 6)23°53'8.24"N 86° 7'4.94"E 7)23°53'12.34"N 86° 7'9.46"E 8)23°53'17.76"N 86° 7'6.83"E	**No**	**4.13**	**499.54 x 82.68 x 0.11**	**2.61**	4543	11857	7114
Barakar River	**Mauza-** Panrua, Anchal-Purvi Tundi District-Dhanbad	Panrua Sand Ghat	**Plot No.**-2455(P)	1) 23°55'54.14"N 86°38'50.27"E 2) 23°55'55.70"N 86°38'52.86"E 3) 23°55'44.91"N 86°39'0.83"E 4) 23°55'43.96"N 86°38'59.46"E	**No**	**2.74**	**394.94 x 69.38 x 0.15**	**2.62**	4110	10768	6461

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

District	Anchal/Circle	Village/Mauza	Khata & Plot No	क्या अवेदित भूमि सर्वे खतियान यथा रजिस्टर II में जंगल झाडी के रूप में दर्ज है? (Yes or No)	Whether Distance of Project Location from Reserved Forest/Protected Forest is 250m ?	Letter No. & Date from Wild Life
Dhanbad	Jharia	Tasra	Plot No.-786	**No** Letter.No.-14 Date-04.01.2023	Letter No.-476 Date-22.02.2023	Letter No.- 400, Date:27.02.2023
Dhanbad	Jharia	Het Kandra	Plot No.-785	**No** Letter.No.-14 Date-04.01.2023	Letter No.-476 Date-22.02.2023	Letter No.- 400, Date:27.02.2023
Dhanbad	Jharia	Chasnala	Plot No.-960 *(As per C.O. Letter Plot no. 650)*	**No** Letter.No.-14 Date-04.01.2023	Letter No.-476 Date-22.02.2023	Letter No.- 400, Date:27.02.2023
Dhanbad	Jharia	Jahajtand (Bhowra)	Khata No.-186 Plot No.-2752(P)	**No** Letter.No.-14 Date-04.01.2023	Letter No.-476 Date-22.02.2023	Letter No.- 400, Date:27.02.2023
Dhanbad	Jharia	Bhowra	Khata No.-186 Plot No.-2235(P) Plot No.-74(P)	**No** Letter.No.-350 Date-04.03.2023	Letter No.-476 Date-22.02.2023	Letter No.- 400, Date:27.02.2023
Dhanbad	Jharia	Dungrighat (Dungri as per C.O. letter)	Khata No.-126 Plot No.-01	**No** Letter.No.-252 Date-21.02.2023	Letter No.-476 Date-22.02.2023	Letter No.- 400, Date:27.02.2023
Dhanbad	Jharia	Dungri-Patia	Khata No.-126 Plot No.-01	**No** Letter.No.-..... Date-29.05.2020	Letter No.-476 Date-22.02.2023	Letter No.- 400, Date:27.02.2023
Dhanbad	Putki	Dungri-Petia	Khata No.-201	**No**	Letter No.-476	Letter No.- 400,

		(***Petia as per C.O. letter)***	Plot No.-1755 (New), 736P (Old)	Letter.No.-246 Date-26.07.2021 & Letter No.-90 Date- 23.02.2023	Date-22.02.2023	Date:27.02.2023
Dhanbad	Putki	Tetangabad	Khata No.-15 Plot No.-253(P)	**No** Letter.No.-212 Date-29.05.2020	Letter No.-476 Date-22.02.2023	Letter No.- 400, Date:27.02.2023
Dhanbad	Baghmara	Singra	Plot No.-2283 (As per co letter- Plot No.-6158 (new))	**No** Letter.No.-01 Date-02.01.2023	Letter No.-476 Date-22.02.2023	Letter No.- 400, Date:27.02.2023
Dhanbad	Baghmara	Nagda	Plot No.-1574(P)	**No** Letter.No.-01 Date-02.01.2023	Letter No.-476 Date-22.02.2023	Letter No.- 400, Date:27.02.2023
Dhanbad	Baghmara	Telmocho	Plot No.-3596(P)	**No** Letter.No.-01 Date-02.01.2023	Letter No.-476 Date-22.02.2023	Letter No.- 400, Date:27.02.2023
Dhanbad	Baghmara	Lohpiti	Plot No.-3399(P),	**No** Letter.No.-01 Date-02.01.2023	Letter No.-476 Date-22.02.2023	Letter No.- 400, Date:27.02.2023
Dhanbad	Kaliasole	Jajalpur	Plot No.- 370(P) & 413(P) As per C.O. letter Khata No.-77 (New) Plot No.-108/413	**No** Letter.No.-01 Date-02.01.2023	Letter No.-476 Date-22.02.2023	Letter No.- 400, Date:27.02.2023
Dhanbad	Egarkunda	Dumarkunda	[As per co letter- Khata No.(old)-309 Plot No.(old)- 3958 Khata No. 532(new) PlotNo- 3806/4142(new),	**No** Letter.No.-03 Date-02.01.2023	Letter No.-476 Date-22.02.2023	Letter No.- 400, Date:27.02.2023

			3806/4143,3796/4144, 3805/4145, 3805/4148]			
Dhanbad	Topchanchi	Hariharpur	Plot No.-5304(P)	**No** Letter.No.-08 Date-02.01.2023	Letter No.-476 Date-22.02.2023	Letter No.- 400, Date:27.02.2023
Dhanbad	Purbi Tundi	Panrua	Plot No.-2455(P)	No Letter No.-58 Date- 11.02.2023	Letter No.-476 Date-22.02.2023	Letter No.- 400, Date:27.02.2023

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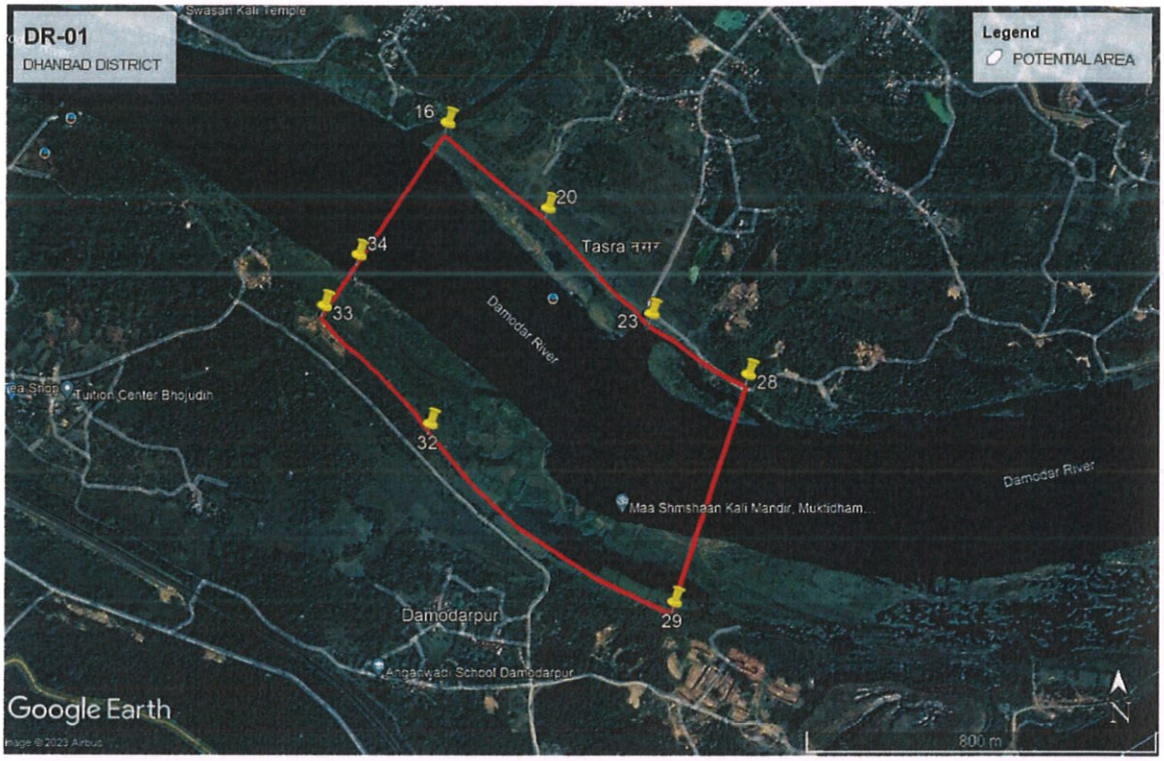
GOOGLE IMAGE OF SAND GHAT WITH POTENTIAL AREA

LEASE 1



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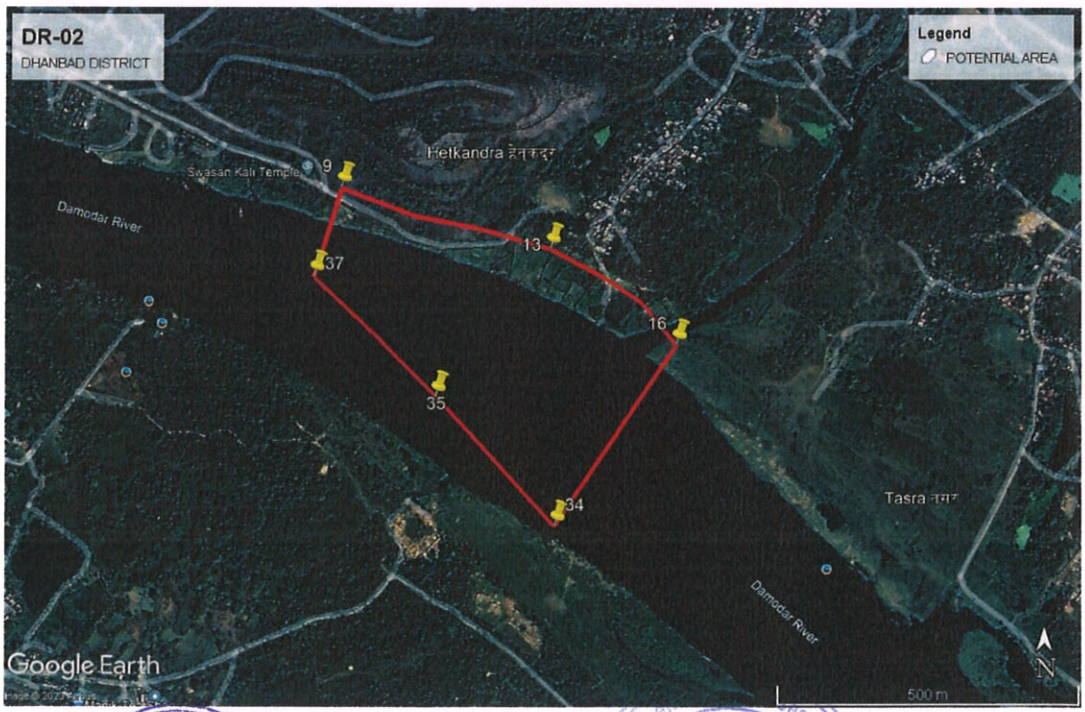

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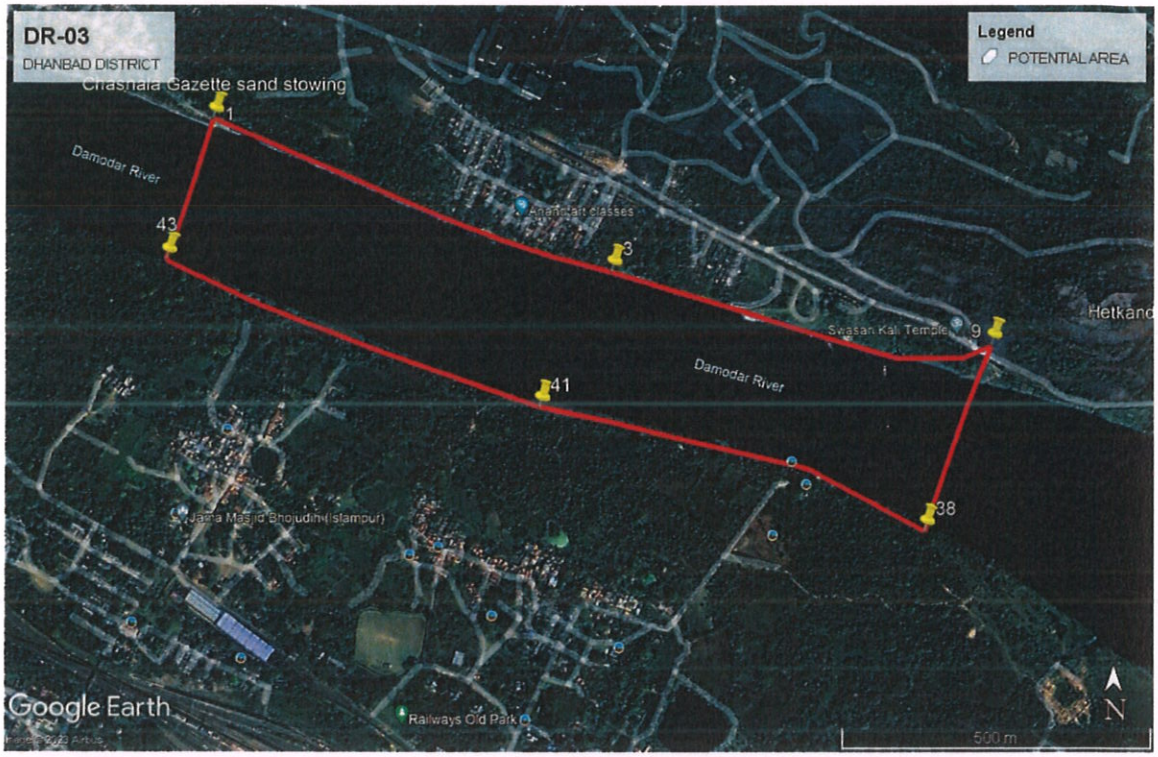
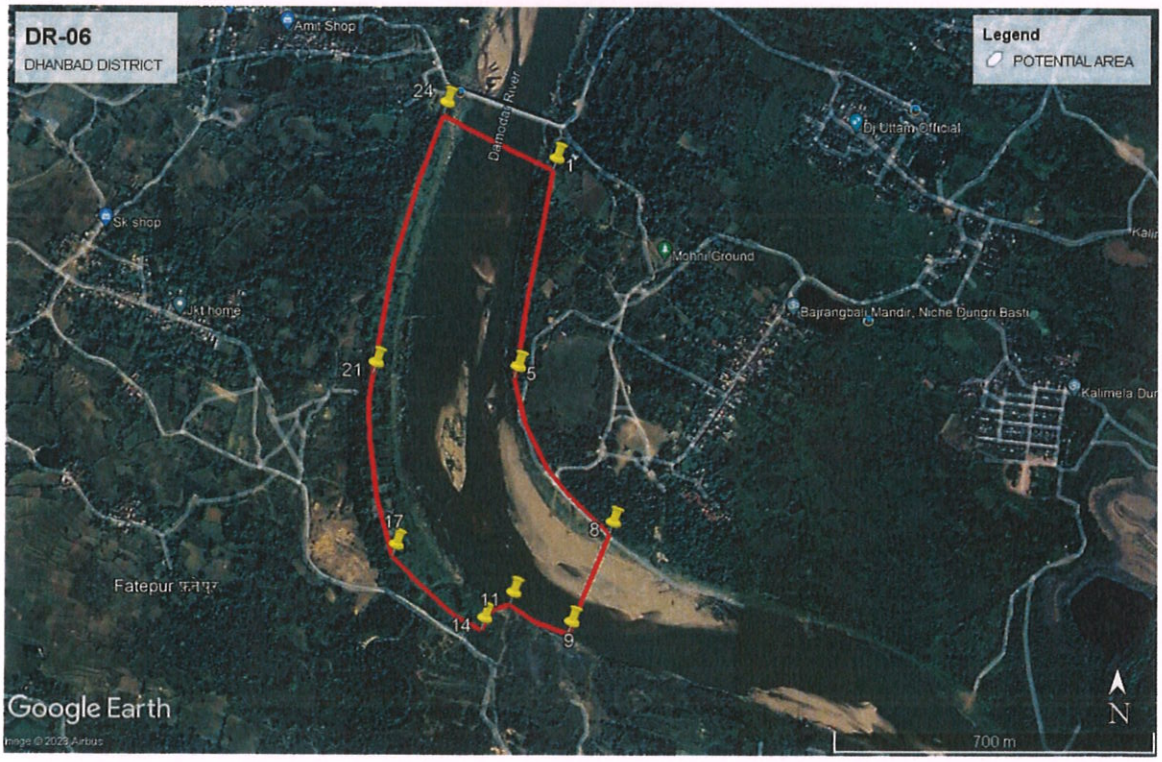


LEASE 4

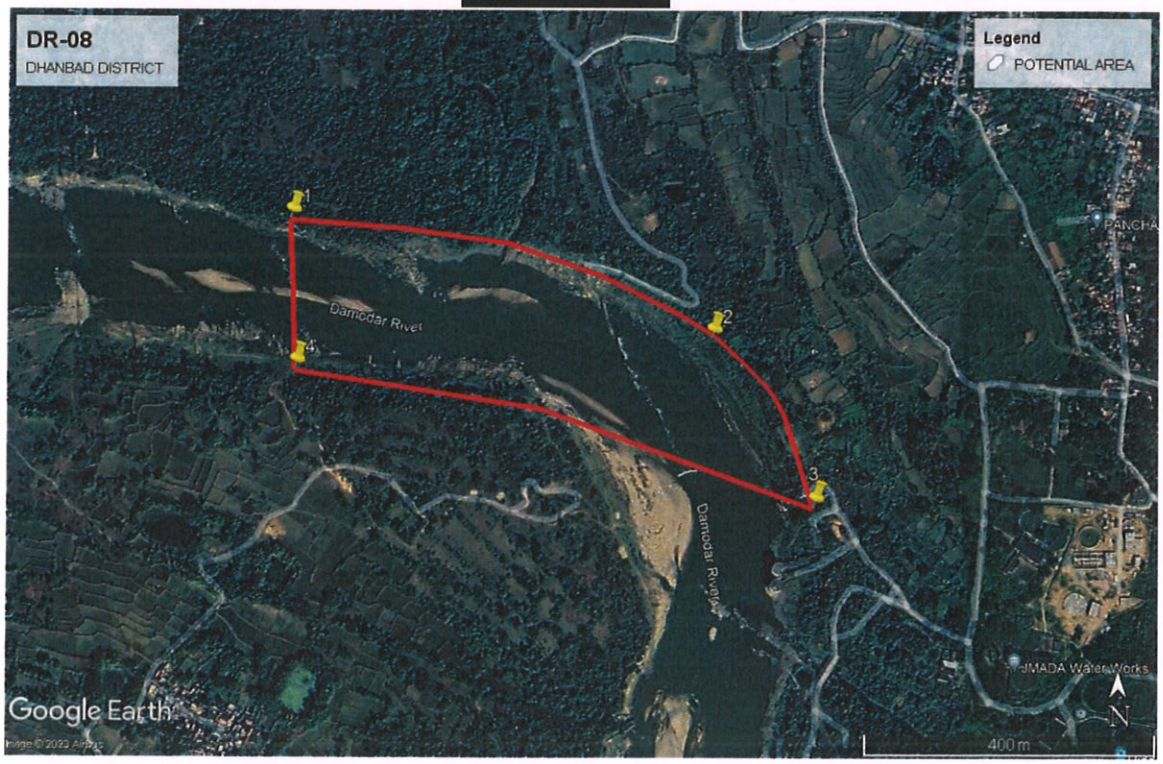
LEASE 5

LEASE 6

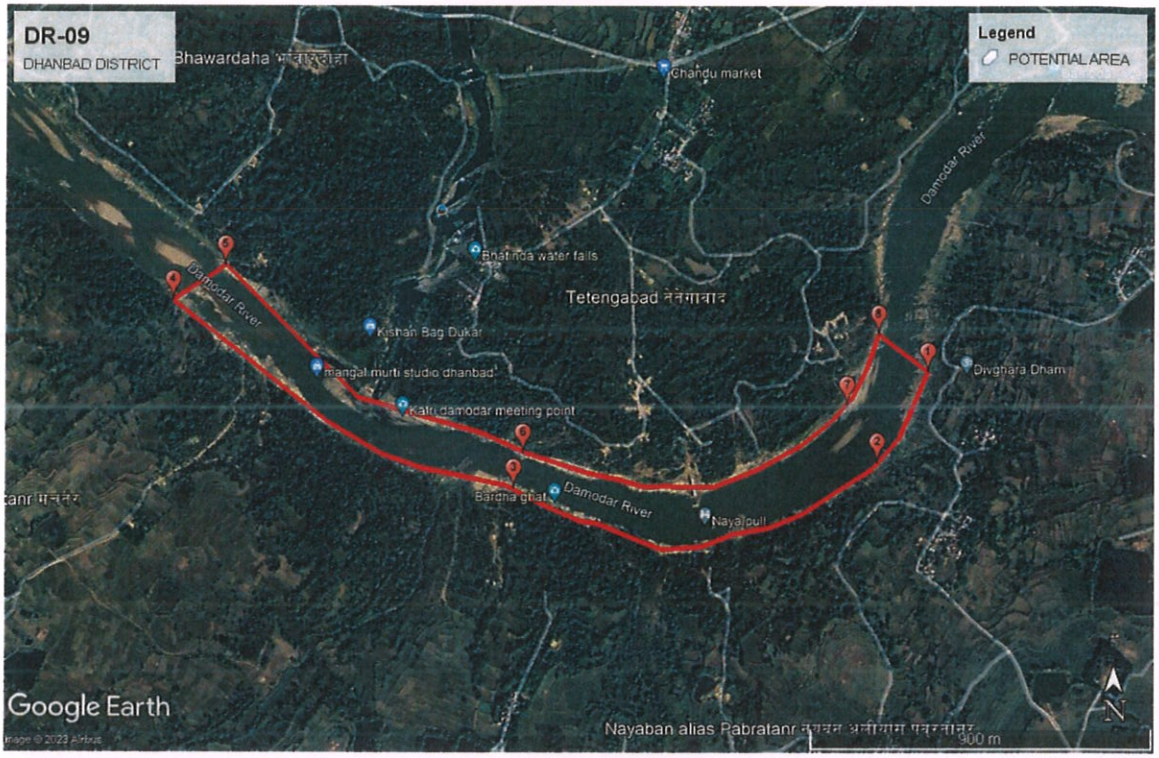


LEASE 7

LEASE 8



LEASE 9



LEASE 10

LEASE 11

LEASE 12

LEASE- 13

LEASE -14

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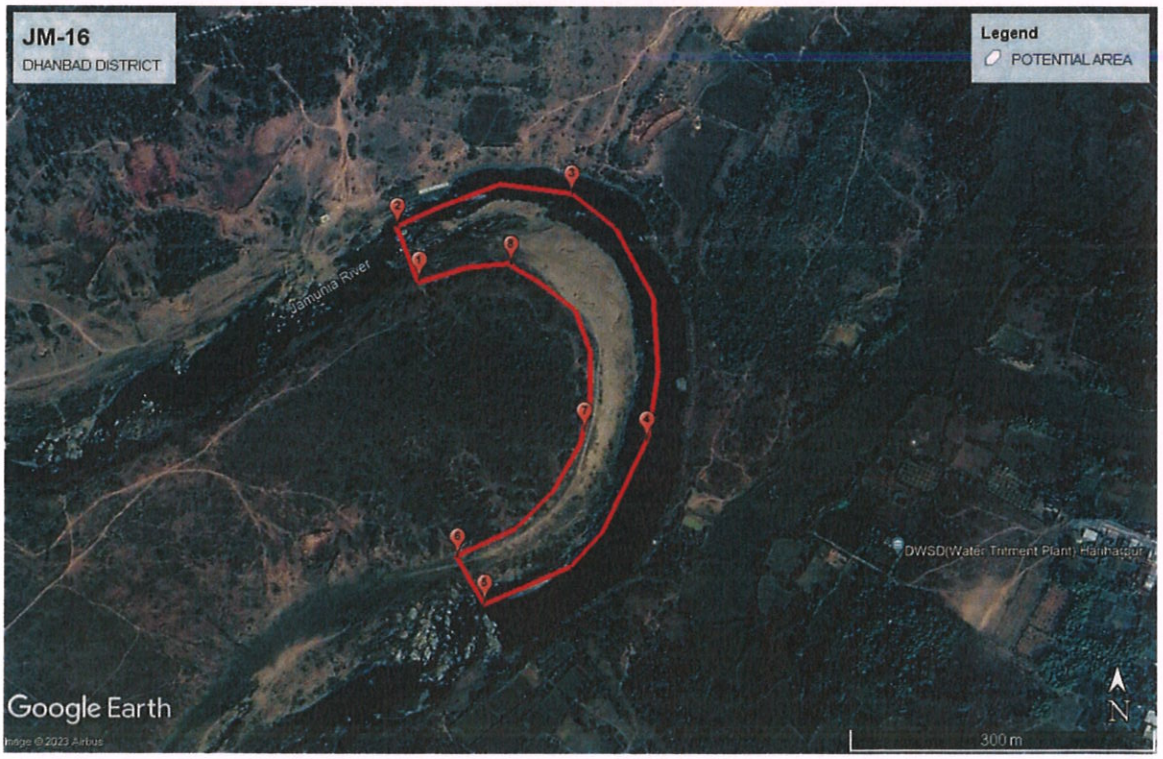
LEASE -15

LEASE-16



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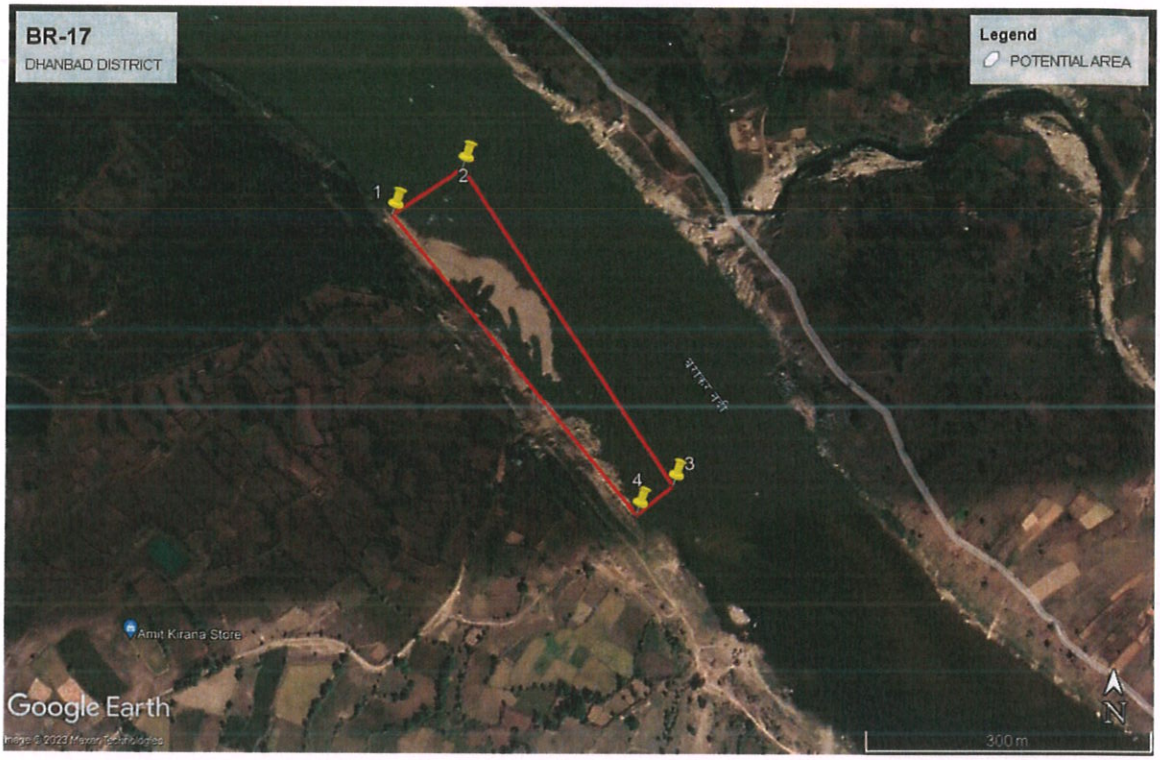
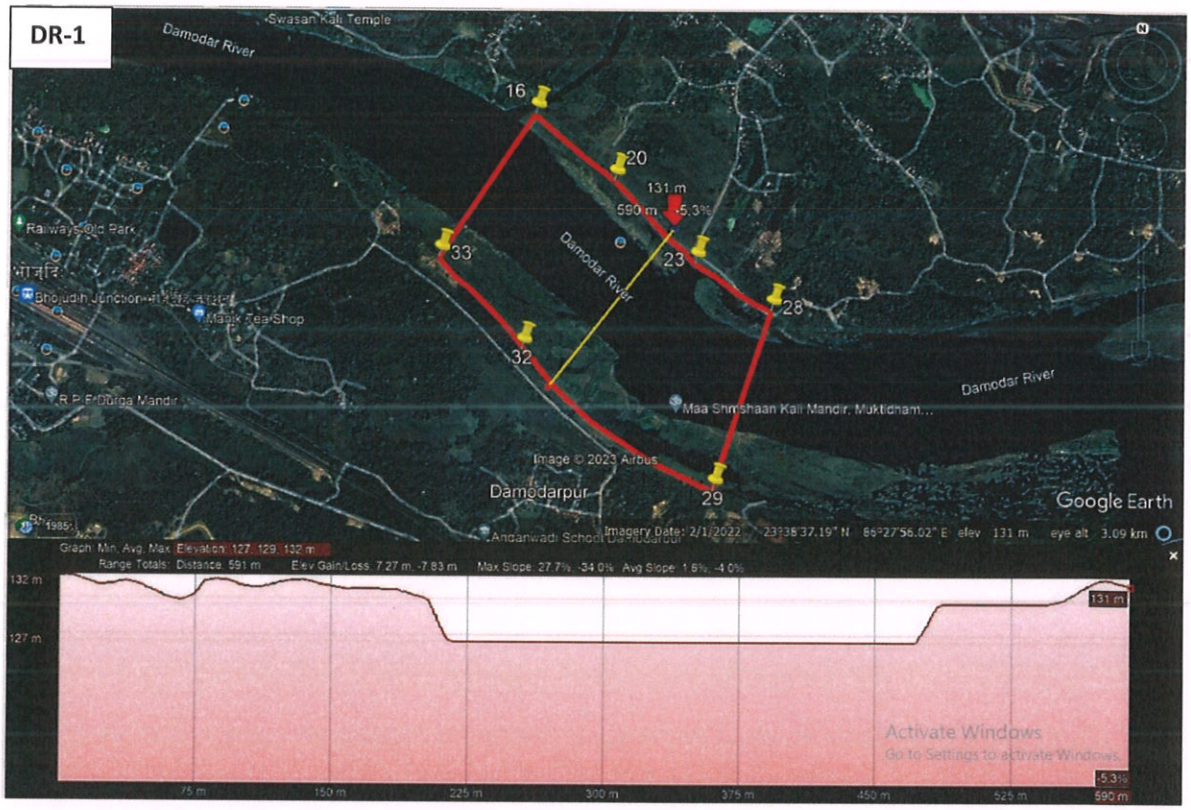
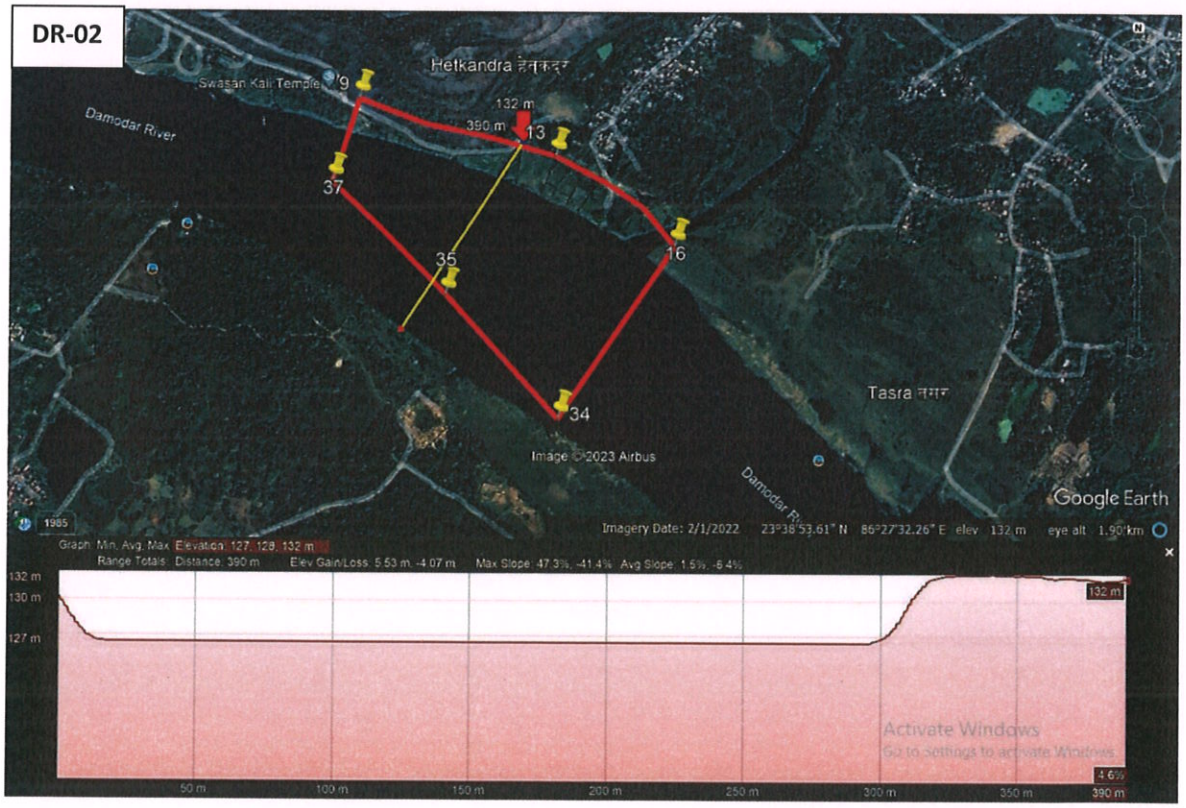
LEASE- 17

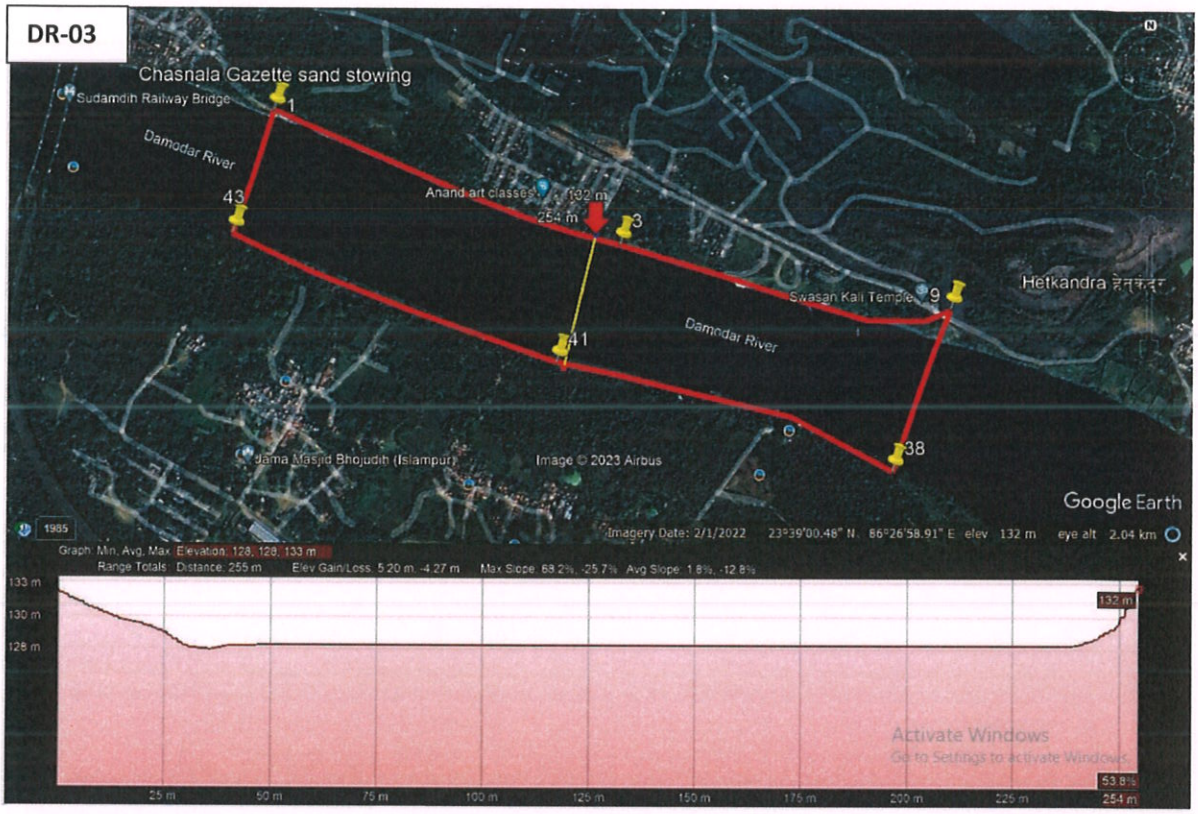

BR-17
DHANBAD DISTRICT
Legend
POTENTIAL AREA
1
2
3
4
Amit Kirana Store
Google Earth
300 m
N

CROSS SECTION OF RIVER BED OF PROPOSED SITES





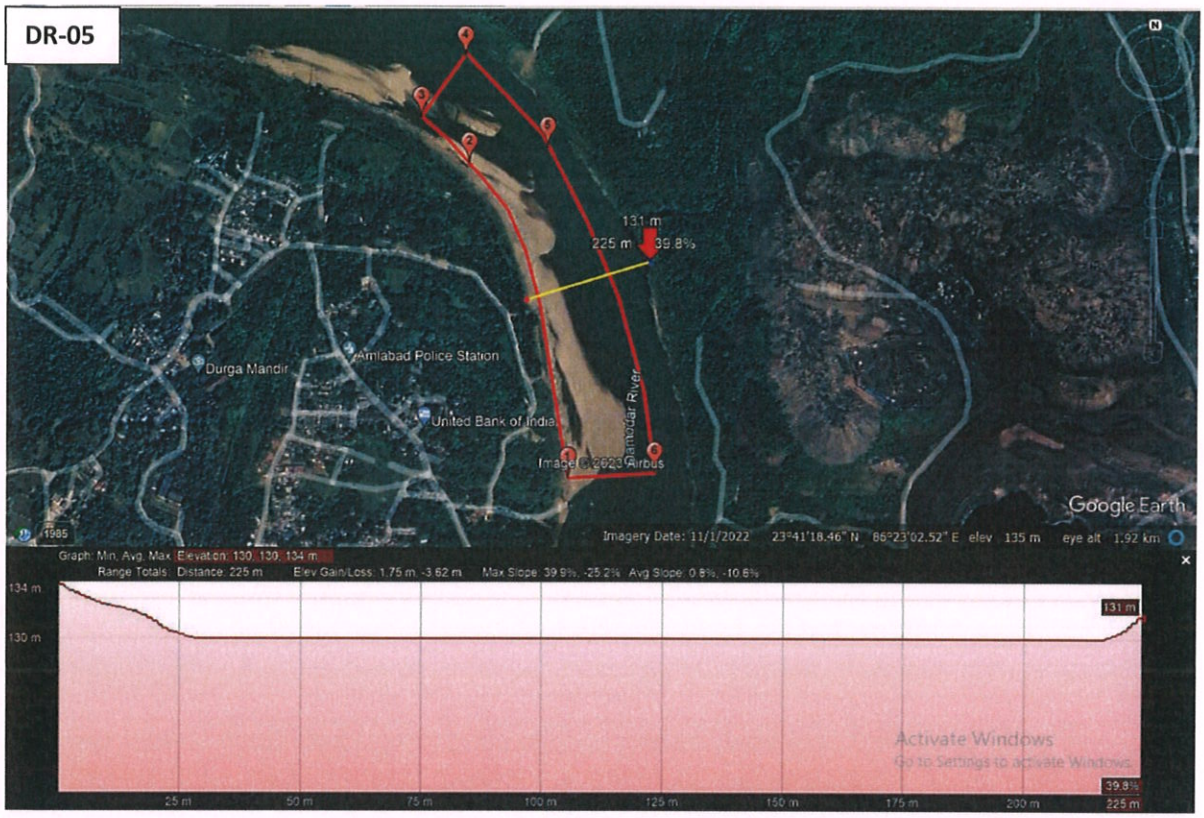
DR-03


Chasnala Gazette sand stowing
Sudamdih Railway Bridge
Damodar River
Anand art classes
132 m
254 m
Swasan Kali Temple
Hetkandra हेतकंदर
Damodar River
Jama Masjid Bhojudih (Islampur)
Image © 2023 Airbus
Google Earth
Imagery Date: 2/1/2022 23°39'00.48" N 86°26'58.91" E elev 132 m eye alt 2.04 km
Graph: Min, Avg, Max Elevation: 128, 128, 133 m
Range Totals: Distance: 255 m Elev Gain/Loss: 5.20 m, -4.27 m Max Slope: 68.2%, -25.7% Avg Slope: 1.8%, -12.8%
133 m
130 m
128 m
132 m
25 m
50 m
75 m
100 m
125 m
150 m
175 m
200 m
225 m
254 m
Activate Windows
Go to Settings to activate Windows.

DR-04

Sanjay Tailors
130 m
273 m
0.0%
JAHAJTAND
Image © 2023 Airbus
Damodar River
Google Earth
Imagery Date: 11/1/2022 23°40'38.85" N 86°23'01.67" E elev 134 m eye alt 1.63 km
Graph: Min, Avg, Max Elevation: 130, 130, 131 m
Range Totals: Distance: 273 m Elev Gain/Loss: 0 m, -1.13 m Max Slope: -, -22.6% Avg Slope: -, -5.0%
131 m
130 m
130 m
25 m
50 m
75 m
100 m
125 m
150 m
175 m
200 m
225 m
250 m
273 m
0.0%
Activate Windows
Go to Settings to activate Windows.

DR-05



DR-06

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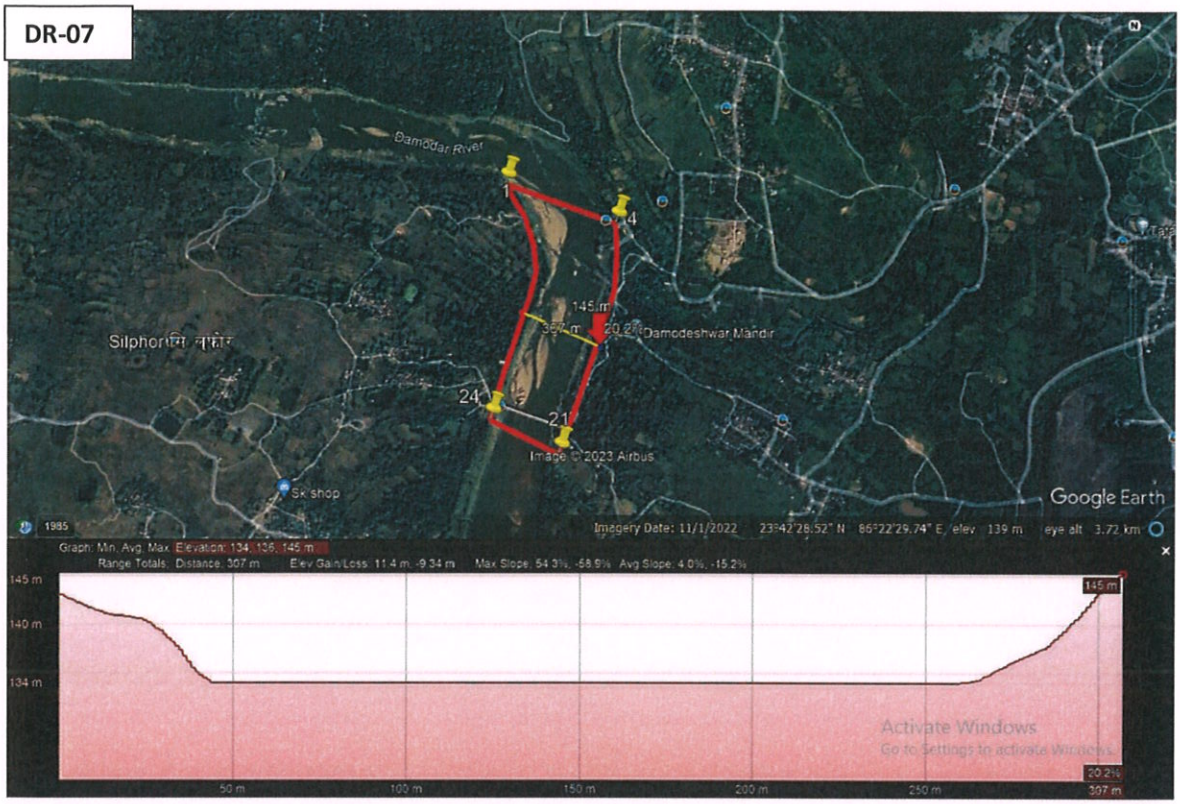
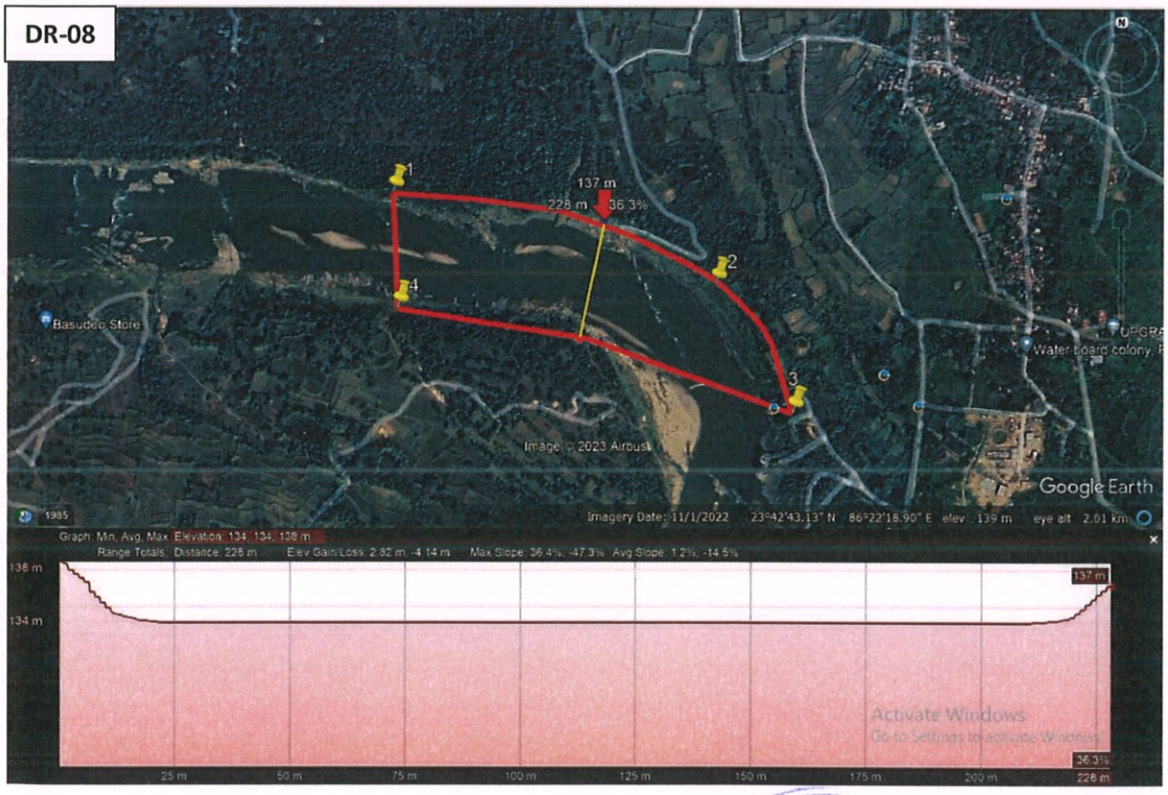
DR-07



DR-08



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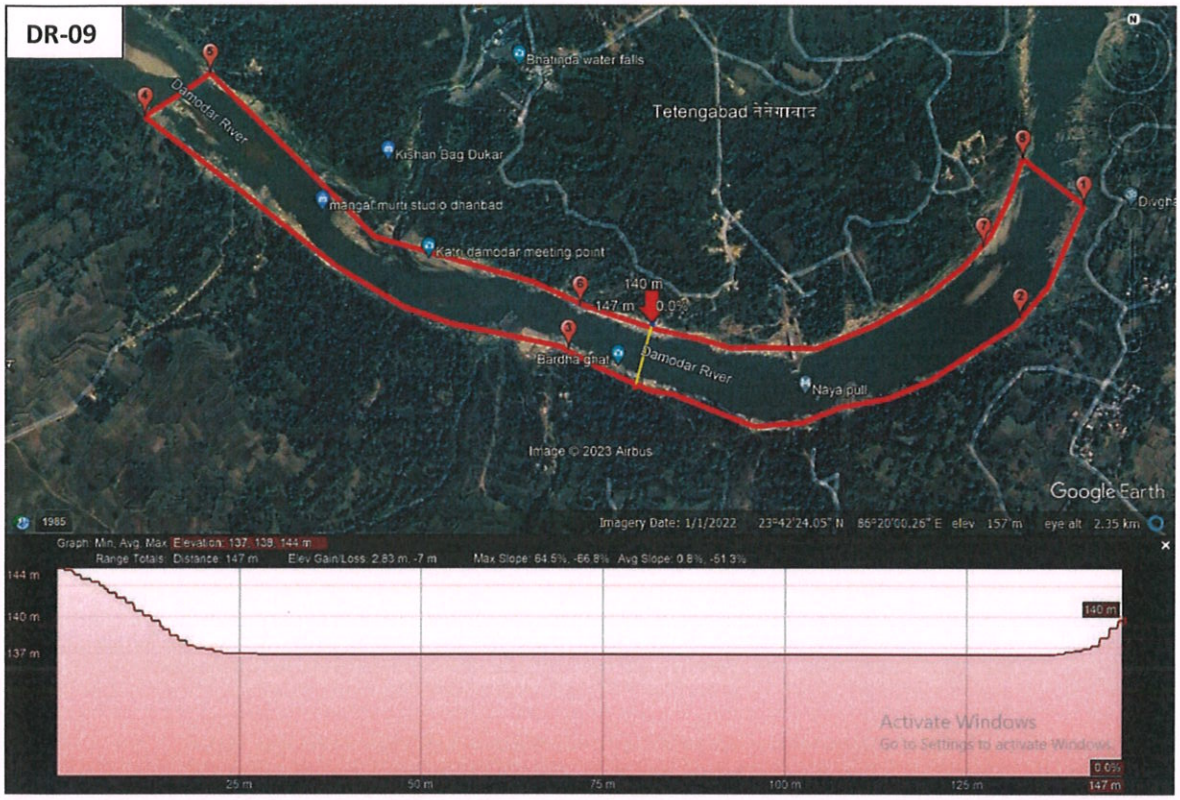
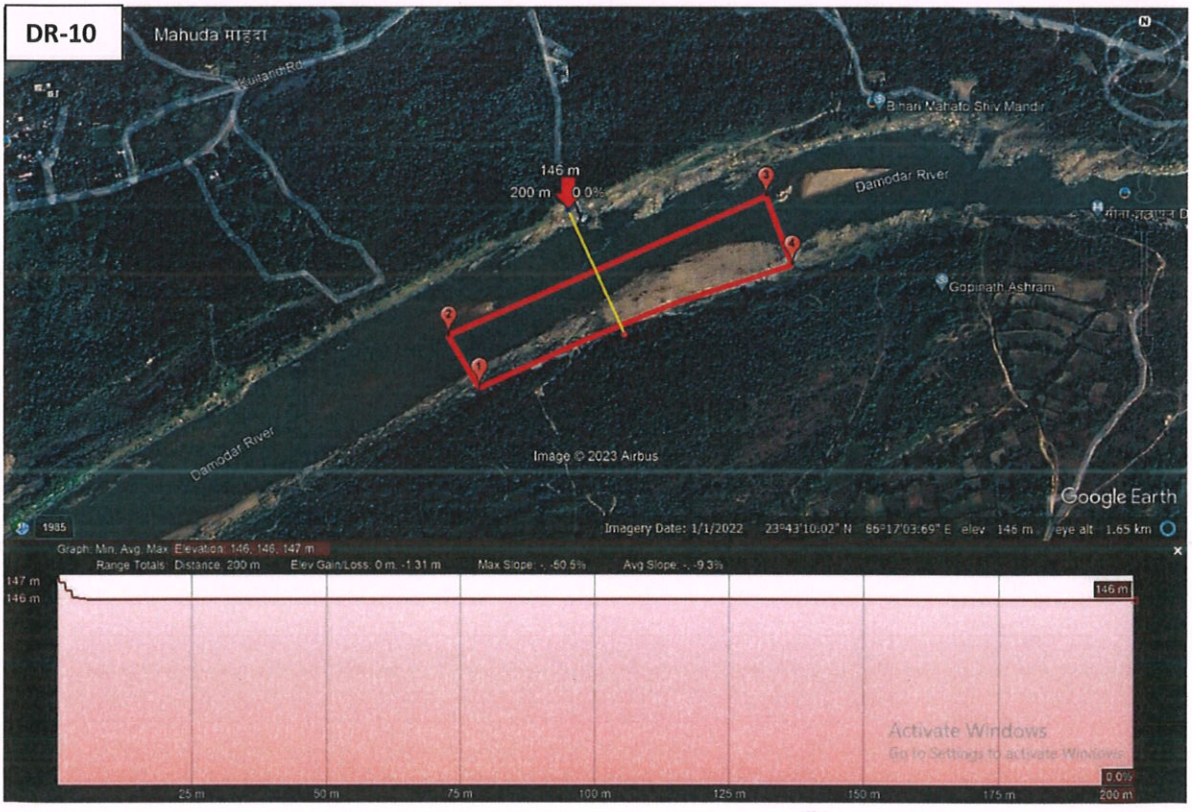
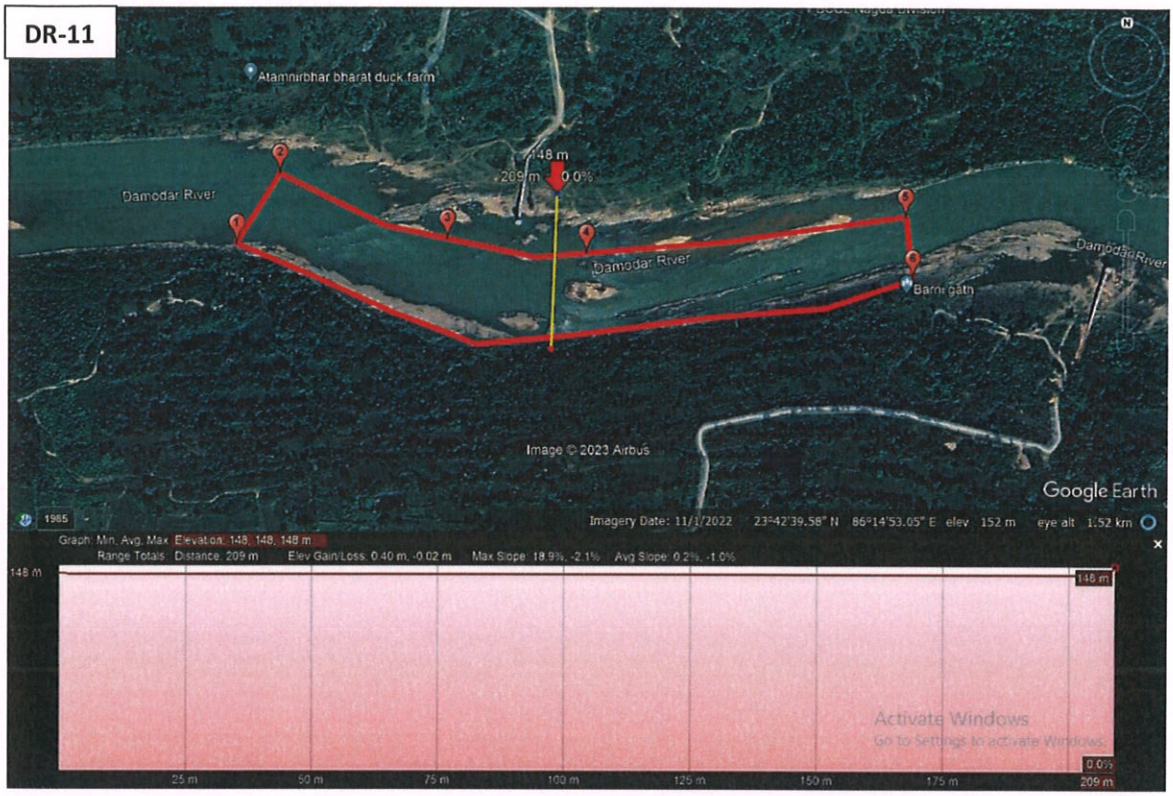
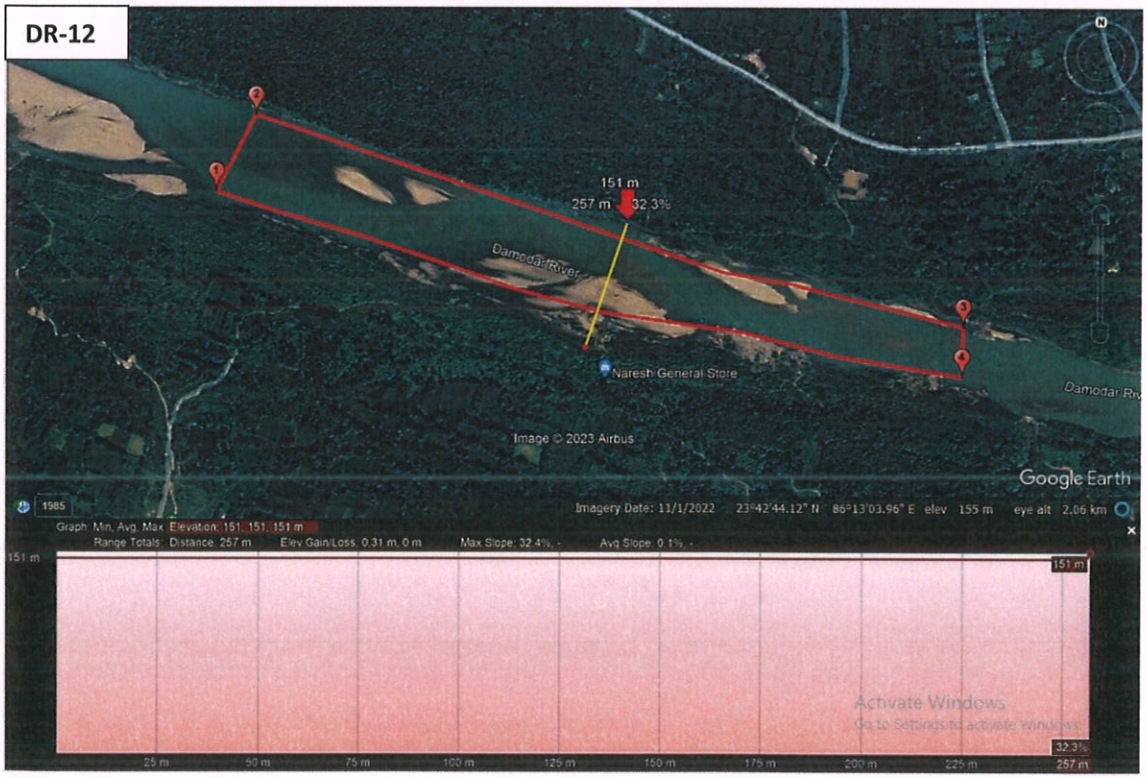

DR-09
Bhatinda water falls
Tetengabad तेतेंगाबाद
Damodar River
Kishan Bag Dukar
mangal murti studio dhanbad
Kaku damodar meeting point
140 m
147 m
0.0%
Bardha ghat
Damodar River
Naya pull
Image © 2023 Airbus
Google Earth
Imagery Date: 1/1/2022 23°42'24.05" N 86°20'00.26" E elev 157 m eye alt 2.35 km
Graph: Min, Avg, Max Elevation: 137, 139, 144 m
Range Totals: Distance: 147 m Elev Gain/Loss: 2.83 m, -7 m Max Slope: 64.5%, -66.8% Avg Slope: 0.8%, -51.3%
144 m
140 m
137 m
140 m
25 m
50 m
75 m
100 m
125 m
147 m
Activate Windows


DR-10
Mahuda माहुदा
Bihari Mahato Shiv Mandir
146 m
200 m
0.0%
Damodar River
Gopinath Ashram
Damodar River
Image © 2023 Airbus
Google Earth
Imagery Date: 1/1/2022 23°43'10.02" N 86°17'03.69" E elev 146 m eye alt 1.65 km
Graph: Min, Avg, Max Elevation: 146, 146, 147 m
Range Totals: Distance: 200 m Elev Gain/Loss: 0 m, -1.31 m Max Slope: -, -50.5% Avg Slope: -, -9.3%
147 m
146 m
146 m
25 m
50 m
75 m
100 m
125 m
150 m
175 m
200 m
Activate Windows

DR-11



DR-12



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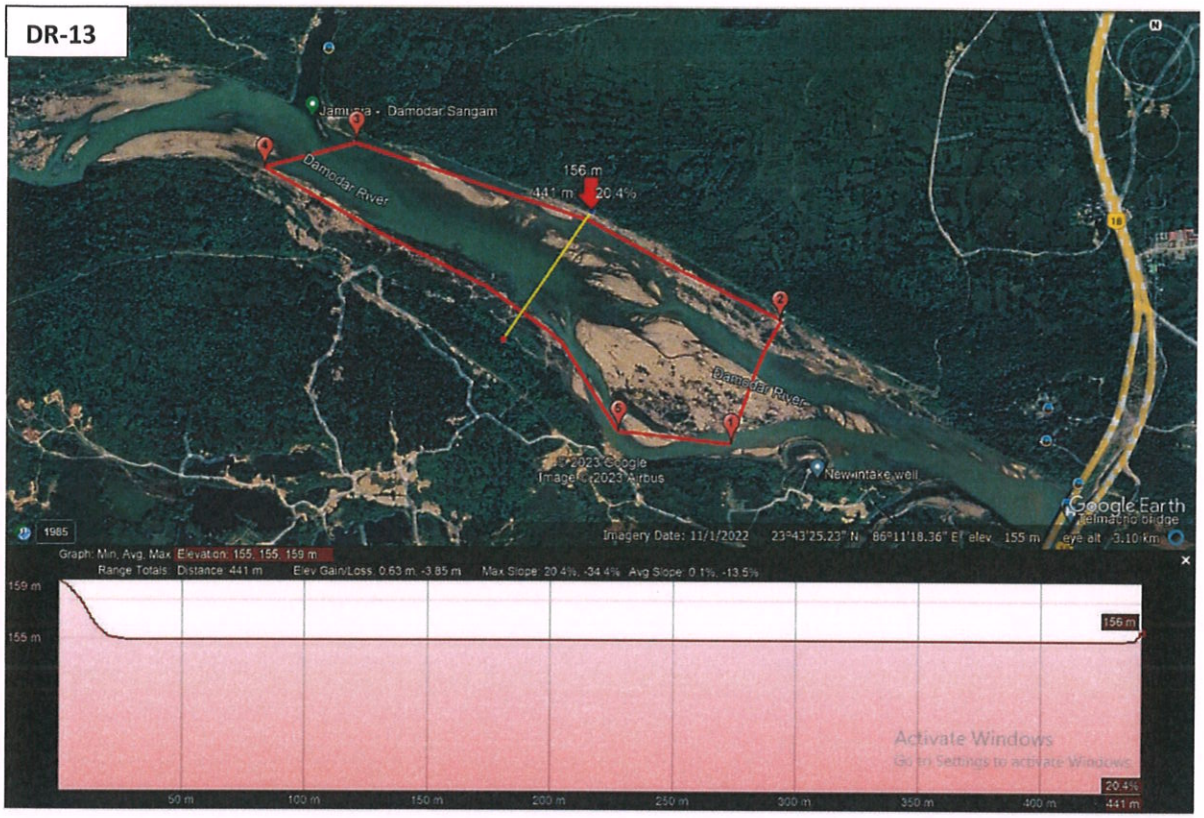
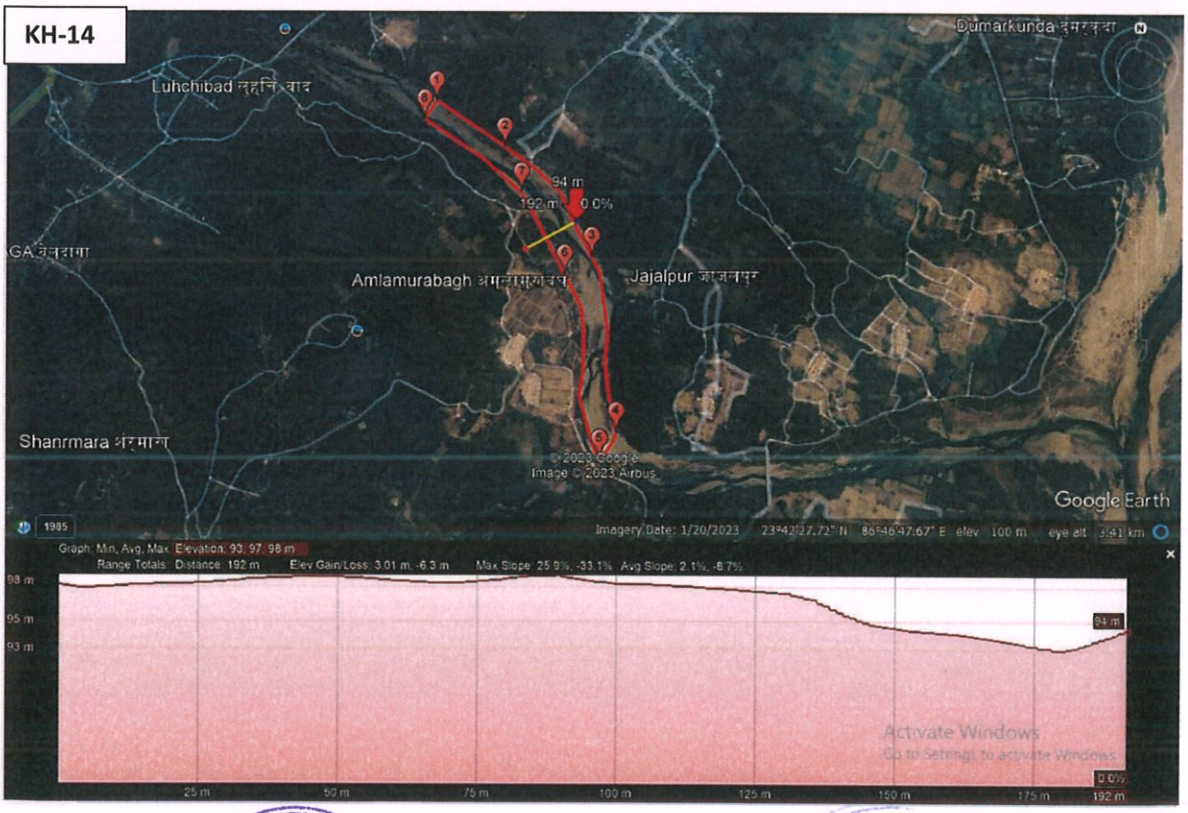
DR-13


Jamunia - Damodar Sangam
Damodar River
156 m
441 m 20.4%
Damodar River
Newintake well
Google Earth
Graph: Min, Avg, Max Elevation: 155, 155, 159 m
Range Totals: Distance: 441 m
Elev Gain/Loss: 0.63 m, -3.85 m
Max Slope: 20.4%, -34.4%
Avg Slope: 0.1%, -13.5%
159 m
155 m
156 m
20.4%
441 m

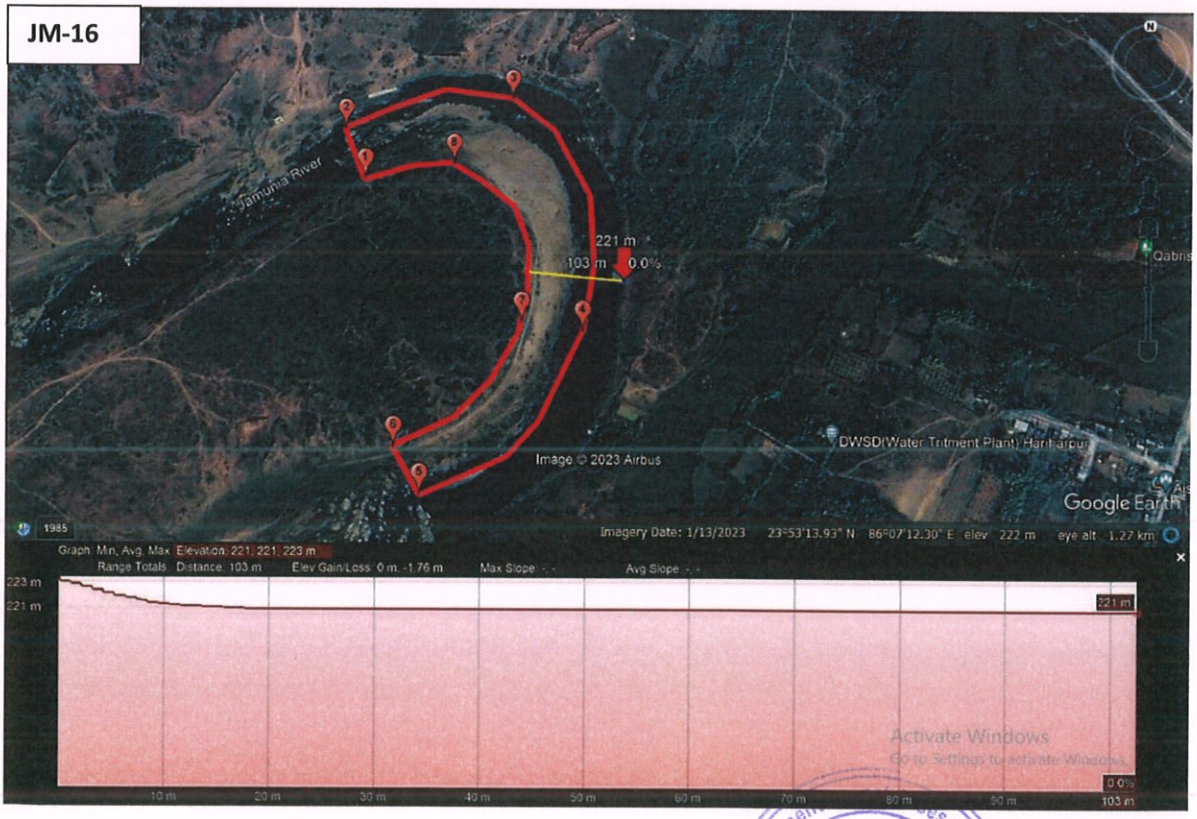
KH-14


Dumarkunda डुमरकुंदा
Luhchibad लुहचिबाद
94 m
192 m 0.0%
Amlamurabagh अमलामुराबाग
Jajalpur जाजलपुर
Shanrmara शंरमारा
Google Earth
Graph: Min, Avg, Max Elevation: 93, 97, 98 m
Range Totals: Distance: 192 m
Elev Gain/Loss: 3.01 m, -6.3 m
Max Slope: 25.9%, -33.1%
Avg Slope: 2.1%, -6.7%
98 m
95 m
93 m
94 m
0.0%
192 m

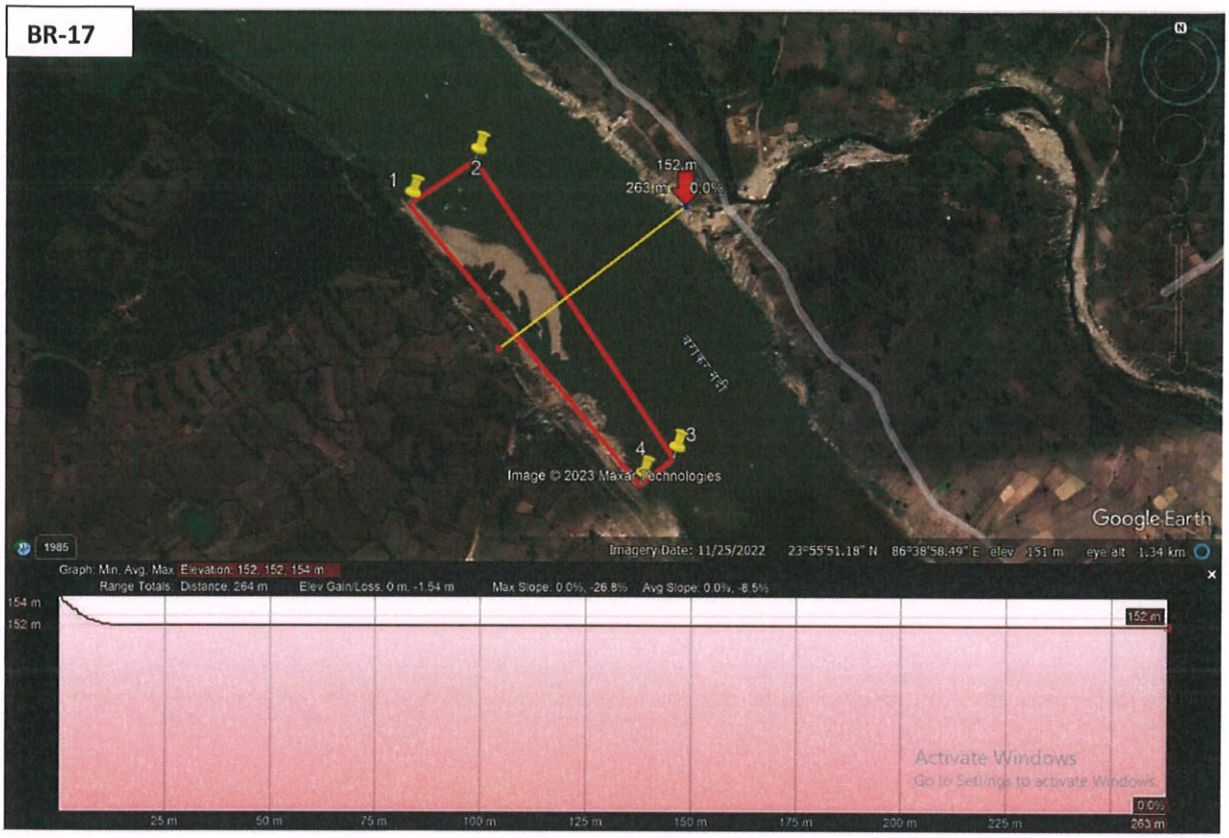
BR-15

4 No. Balubanker, Chirkunda
Dumarkunda-दमरकुंदा
Cattle farm (Goats)
96 m
339 m 2.8%
JHARKHAND
Suresh creation
जोजलपुर
© 2023 Google
Image © 2023 Airbus
Hatinal Durga Mandir
Google Earth
Imagery Date: 1/20/2023 23°42'38.85" N 86°48'00.51" E elev 93 m eye alt 3.09 km
Graph: Min, Avg, Max Elevation: 95, 96, 98 m
Range Totals: Distance: 339 m Elev Gain/Loss: 1.47 m, -3.78 m Max Slope: 2.7%, -5.6% Avg Slope: 1.1%, -1.5%
98 m
95 m
96 m
2.8%
339 m
50 m
100 m
150 m
200 m
250 m
300 m
Activate Windows
Go to Settings to activate Windows.

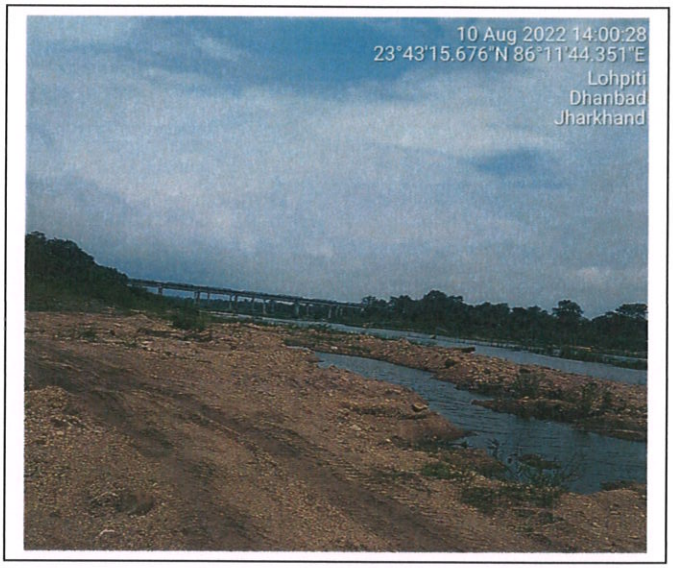
JM-16

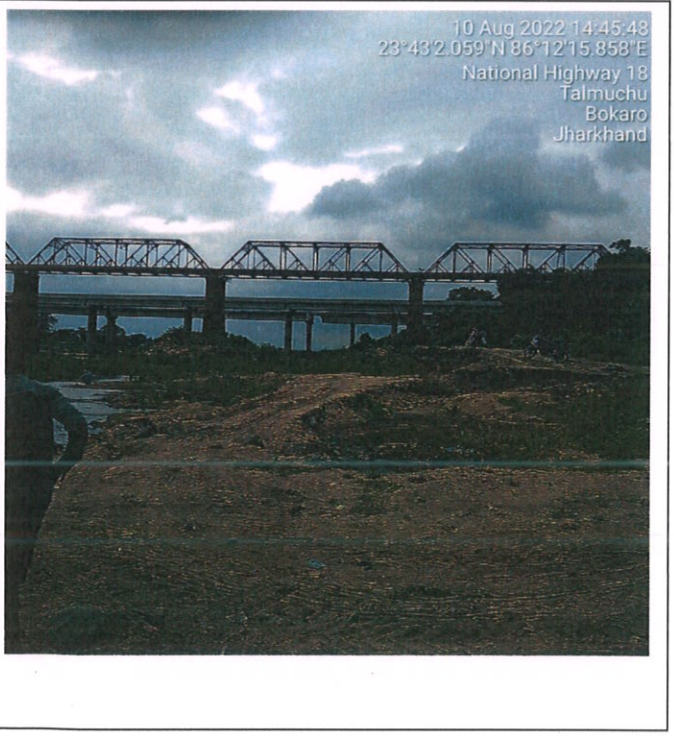

Jamuna River
221 m
103 m 0.0%
DWSD(Water Tritment Plant) Harharpur
Image © 2023 Airbus
Google Earth
Imagery Date: 1/13/2023 23°53'13.93" N 86°07'12.30" E elev 222 m eye alt 1.27 km
Graph: Min, Avg, Max Elevation: 221, 221, 223 m
Range Totals: Distance: 103 m Elev Gain/Loss: 0 m, -1.76 m Max Slope: - - Avg Slope: - -
223 m
221 m
221 m
0.0%
10 m
20 m
30 m
40 m
50 m
60 m
70 m
80 m
90 m
103 m
Activate Windows
Go to Settings to activate Windows.

BR-17


1
2
3
4
152 m
263 m
0.0%
Image © 2023 Maxar Technologies
Google Earth
1985
Imagery Date: 11/25/2022 23°55'51.18" N 86°38'58.49" E elev 151 m eye alt 1.34 km
Graph: Min, Avg, Max Elevation: 152, 152, 154 m
Range Totals: Distance: 264 m Elev Gain/Loss: 0 m, -1.54 m Max Slope: 0.0%, -26.8% Avg Slope: 0.0%, -8.5%
154 m
152 m
152 m
Activate Windows
Go to Settings to activate Windows.
0.0%
25 m
50 m
75 m
100 m
125 m
150 m
175 m
200 m
225 m
263 m

SITE PHOTOGRAPH OF PROPOSED SAND GHATS





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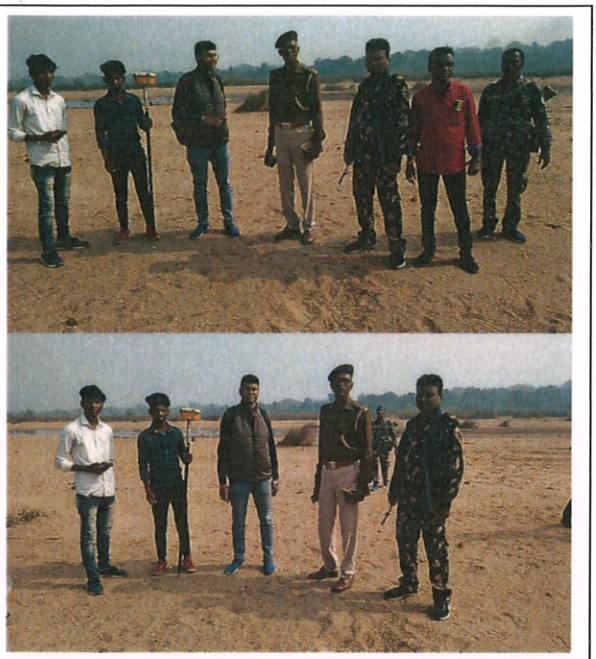

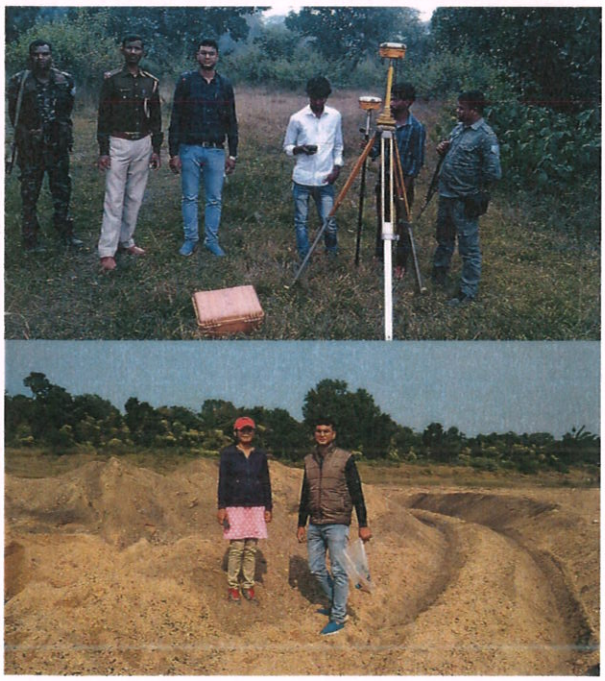

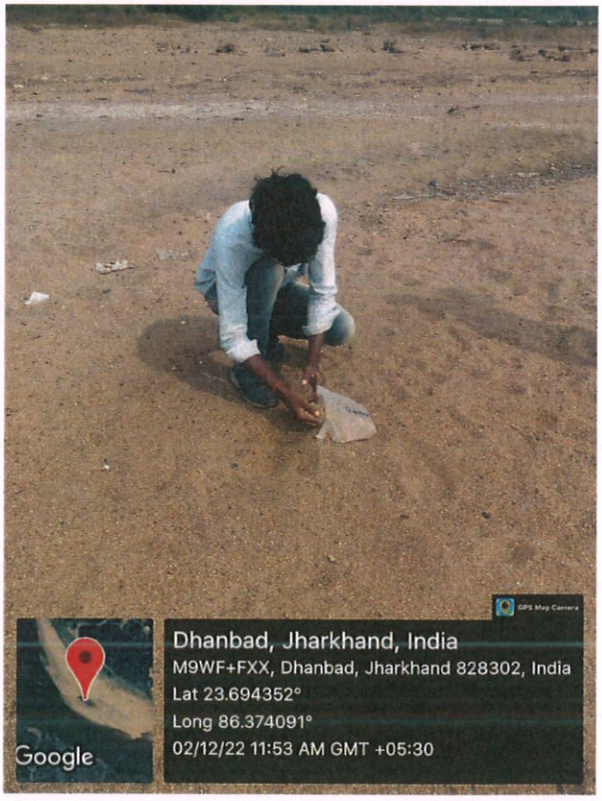

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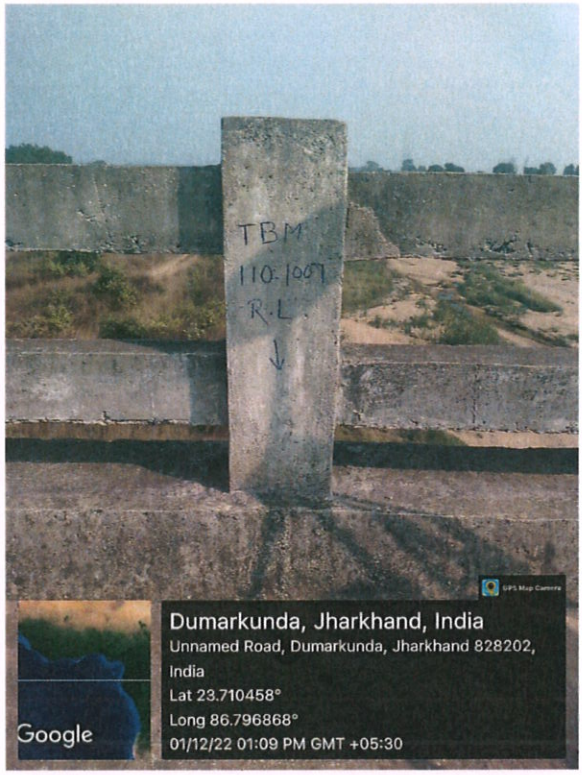

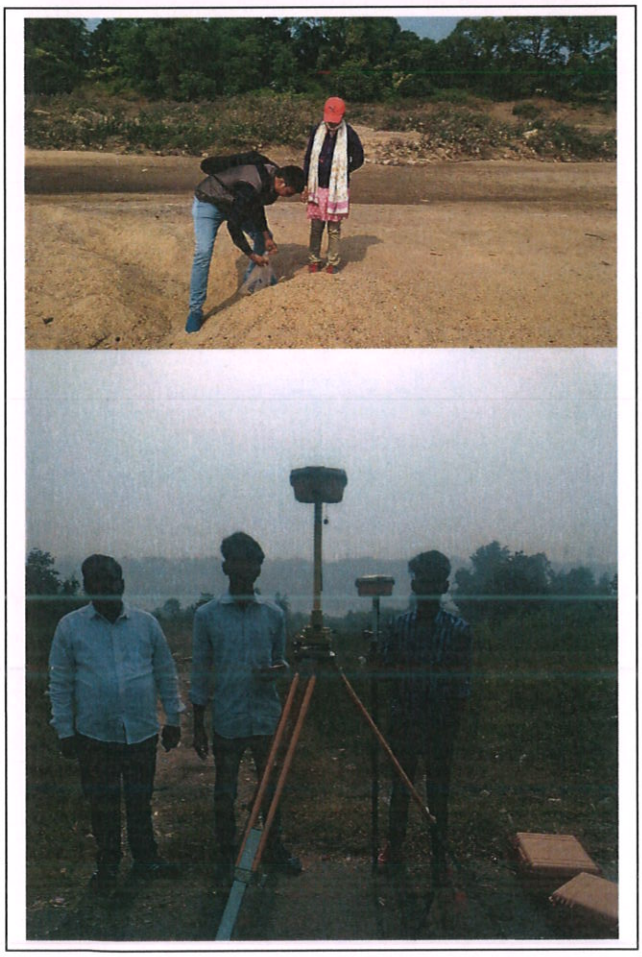

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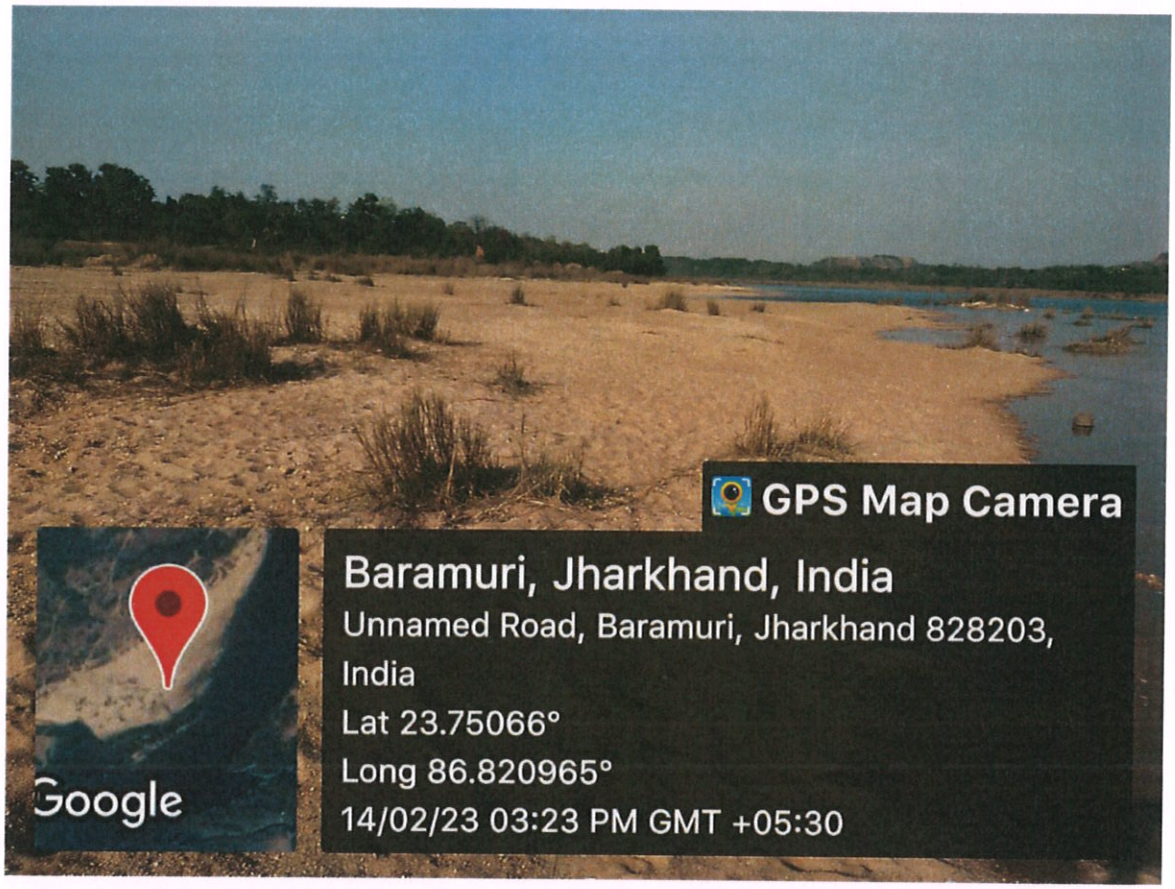
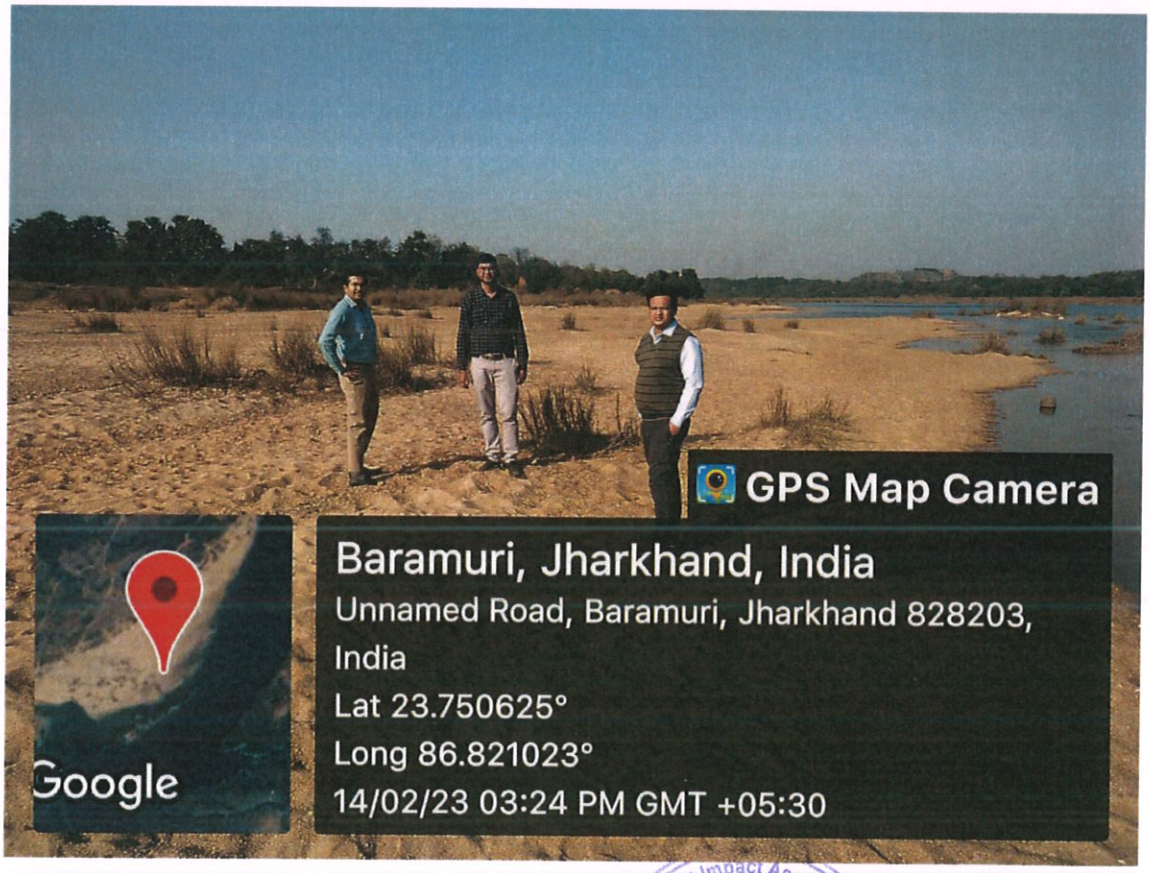

GPS Map Camera
Baramuri, Jharkhand, India
Unnamed Road, Baramuri, Jharkhand 828203, India
Lat 23.75066°
Long 86.820965°
14/02/23 03:23 PM GMT +05:30
Google


GPS Map Camera
Baramuri, Jharkhand, India
Unnamed Road, Baramuri, Jharkhand 828203, India
Lat 23.750625°
Long 86.821023°
14/02/23 03:24 PM GMT +05:30
Google

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. 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 plains through lateral erosion.

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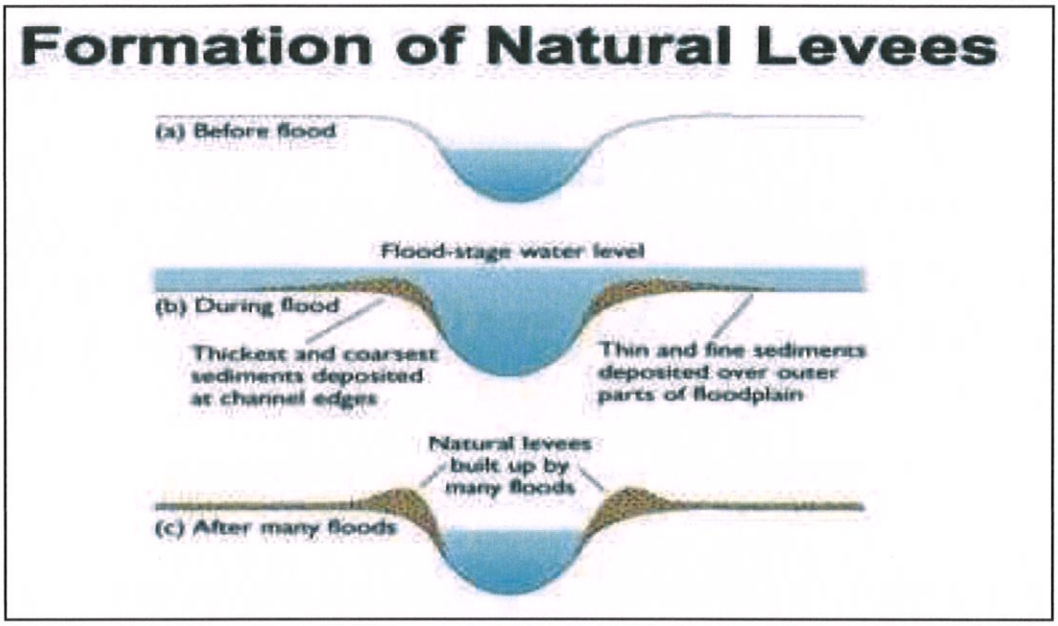
When river floods the velocity of water slows. As the result of this the river's capacity to transport material is reduced and deposition occurs. This deposition leaves a layer of sediment across the whole floodplain. After a series of floods, layers of sediment form along the floodplain.

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

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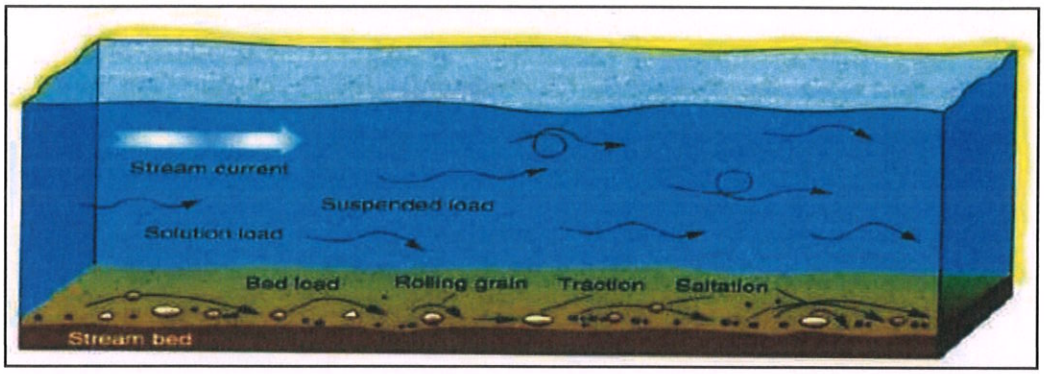
Methods of sediments transport in stream



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.

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 meter, 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 used as base map to know the extent of river course. The mineral reserves have been calculated only upto 1.5 to 2.0-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 importantrole:
  - Structural Plain
  - Structural Hill
  - Structural Ridge
  - Denudation Ridge & Valley
  - Plain & Plateau
  - Highly Dissected pediment
  - 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 & Dandy - Bolton Equation for sediment yield of river. Peak flood discharge for the study area by various methods like Dickens, Jarvis, and Rational formula at 25, 50 and 100 years return period.

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.

CLIMATE:

There is no IMD meteorological station near the study area, the nearest stations being at Ranchi, which are about 100 km from center of the study area. However, the climatic conditions are not much different than recorded at Ranchi.

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 16 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:

Table 20.1: 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	1271.6
2	1270.6
3	1240.7
4	1240.1
5	1207.3
6	1181.8
7	1176.8
8	**1140.4**
9	1131.9
10	1086.5
11	1050.1
12	1002.8
13	990.6
14	983.2
15	902.7
16	854.8

Table 20.2: Calculation of Order Number (m)

	Rainfall Dependability Percentage
	p=50%
m=	N x p/100
	N= 16, p = 50
m=	**8**

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. 8** has the values of 1140.4 mm. So,

P50% = 114.04 cm

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 = 44%

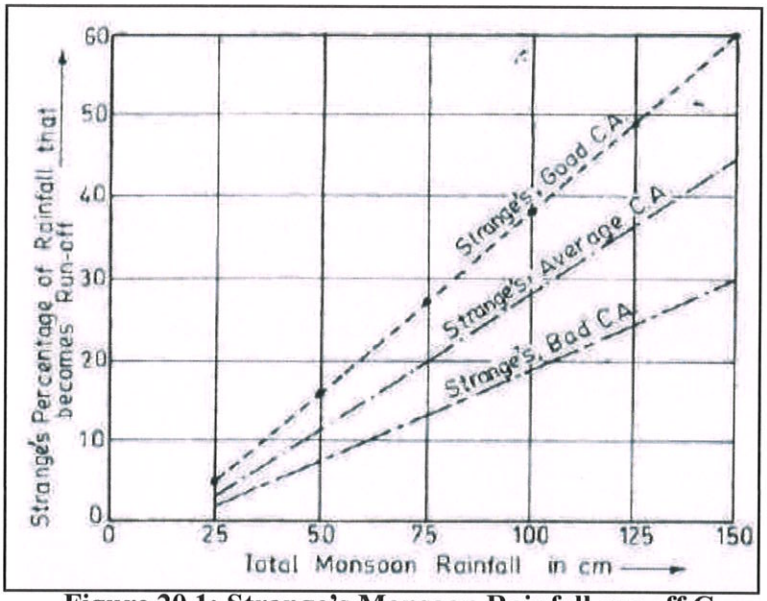


Figure 20.1: Strange's Monsoon Rainfall-runoff Curves

- **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 in) S=1280*(Q) 0.46 *[1.43-0.26 Log(A)]F

For run off more than 2 inches

(Q > 2 in): S= 1958*(e -0.055*Q)*[1.43-0.26 Log (A)]

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

Q = Mean Annual runoff (mm)

A = Net drainage area in sq. km

S.No	Factors		Probable Replenishment
	Barakar River		
i	Catchment Area (sq. km)	2.87 sq. km	82.66 Metric tons / sq. km /year 237.24 M. ton/year
ii	Mean Annual Runoff	1140.4 mm	
	Sediment yield formula (Q > 2 in): S= 1958(e -0.055*Q)*[1.43-0.26 Log (A)]: here: Q = Mean Annual runoff (mm)= 1140.4 A = Catchment Area= 2.87 sq. km Sediment yield S= (Metric tons / sq. km /year)		
	Damodar River		
i	Catchment Area (sq. km)	5.52 sq. km	78.36 Metric tons / sq. km /year 432.53 M. ton/year
ii	Mean Annual Runoff	1140.4 mm	
	Sediment yield formula (Q > 2 in): S= 1958(e -0.055*Q)*[1.43-0.26 Log (A)]: here: Q = Mean Annual runoff (mm)= 1140.4 A = Catchment Area= 5.52 sq. km Sediment yield S= (Metric tons / sq. km /year)		
	Jamuniya River		
i	Catchment Area (sq. km)	0.27 sq. km	98.22 Metric tons / sq. km /year 26.52 M. ton/year
ii	Mean Annual Runoff	1140.4 mm	
	Sediment yield formula (Q > 2 in): S= 1958(e -0.055*Q)*[1.43-0.26 Log (A)]:		

	here: Q = Mean Annual runoff (mm)= 1140.4 A = Catchment Area= 0.27 sq. km Sediment yield S= (Metric tons / sq. km /year)		
	Khudiya River		
i	Catchment Area (sq. km)	0.38 sq. km	95.97 Metric tons / sq. km /year 36.47 M. ton/year
ii	Mean Annual Runoff	1140.4 mm	
	Sediment yield formula (Q > 2 in): S= 1958(e -0.055*Q)*[1.43-0.26 Log (A)]: here: Q = Mean Annual runoff (mm)= 1140.4 A = Catchment Area= 0.38 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			

SEDIMENTS YIELD OF THE RIVER

River	Mean Annual Run-off (mm)	Catchment Area (Sq. km)	Sediment Yield (M. tons /year)
Barakar river	1140.4	2.87	237.24
Damodar River		5.52	432.53
Jamuniya River		0.27	26.52
Khudiya River		0.38	36.47
Total Area		**9.04**	**732.76**

Volume Estimation of Replenished Material for Respective Sand ghats:

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 sand ghats 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, Dhanbad and Assistant Director Geology and same has been validated and Updated from satellite imaginary map.*

RIVER NAME: BARAKAR RIVER		
UIN SAND BAR CODE	**AREA IN SQM**	**AVG. INITIAL LEVEL IN AMSL**
DHN_BR_PRE_01	871244	94.06
DHN_BR_PRE_02	248441	96.57
DHN_BR_PRE_03	207204	97.73
DHN_BR_PRE_04	162810	95.77
DHN_BR_PRE_05	233342	97.38
DHN_BR_PRE_06	256624	99.24
DHN_BR_PRE_07	349999	149.07
DHN_BR_PRE_08	541320	154.09

RIVER NAME: DAMODAR RIVER		
UIN SAND BAR CODE	**AREA IN SQM**	**AVG. INITIAL LEVEL IN AMSL**
DHN_DR_PRE_01	1168864	130.51
DHN_DR_PRE_02	358372	133.01
DHN_DR_PRE_03	820784	134.72
DHN_DR_PRE_04	608380	138.48
DHN_DR_PRE_05	108130	142.30
DHN_DR_PRE_06	510395	144.06
DHN_DR_PRE_07	194005	147.00
DHN_DR_PRE_08	87838	150.76
DHN_DR_PRE_09	233161	152.44
DHN_DR_PRE_10	143735	152.58
DHN_DR_PRE_11	514492	154.17
DHN_DR_PRE_12	767430	156.42

RIVER NAME: JAMUNIYA RIVER		
UIN SAND BAR CODE	**AREA IN SQM**	**AVG. INITIAL LEVEL IN AMSL**
DHN_JM_PRE_01	171721	221.72
DHN_JM_PRE_02	42368	213.79
DHN_JM_PRE_03	35408	211.57
DHN_JM_PRE_04	19507	200.40

RIVER NAME: KHUDIYA RIVER		
UIN SAND BAR CODE	**AREA IN SQM**	**AVG. INITIAL LEVEL IN AMSL**
DHN_KH_PRE_01	226655	98.98
DHN_KH_PRE_02	60943	102.95
DHN_KH_PRE_03	87932	103.86

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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: BARAKAR RIVER		
UIN SAND BAR CODE	***AREA IN SQM***	***AVG. INCREASED LEVEL IN AMSL***
DHN_BR_POS_01	871247	94.92
DHN_BR_POS_02	248443	97.35
DHN_BR_POS_03	207205	98.23
DHN_BR_POS_04	162812	96.15
DHN_BR_POS_05	233345	97.57
DHN_BR_POS_06	256625	99.43
DHN_BR_POS_07	350000	149.67
DHN_BR_POS_08	541322	154.24

RIVER NAME: DAMODAR RIVER		
UIN SAND BAR CODE	***AREA IN SQM***	***AVG. INCREASED LEVEL IN AMSL***
DHN_DR_POS_01	1168868	130.64
DHN_DR_POS_02	358374	133.41
DHN_DR_POS_03	820787	134.99
DHN_DR_POS_04	608382	138.61
DHN_DR_POS_05	108133	142.45
DHN_DR_POS_06	510399	144.21
DHN_DR_POS_07	194006	147.14
DHN_DR_POS_08	87840	150.88
DHN_DR_POS_09	233166	152.51
DHN_DR_POS_10	143738	152.89
DHN_DR_POS_11	514494	154.64
DHN_DR_POS_12	767431	157.05

RIVER NAME: JAMUNIYA RIVER		
UIN SAND BAR CODE	***AREA IN SQM***	***AVG. INCREASED LEVEL IN AMSL***
DHN_JM_POS_01	171726	221.83
DHN_JM_POS_02	42370	213.92
DHN_JM_POS_03	35409	211.99
DHN_JM_POS_04	19510	200.43

RIVER NAME: KHUDIYA RIVER		
UIN SAND BAR CODE	***AREA IN SQM***	***AVG. INCREASED LEVEL IN AMSL***
DHN_KH_POS_01	226659	99.48
DHN_KH_POS_02	60946	103.16
DHN_KH_POS_03	87933	103.96

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 financialyear.*

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

Comparision 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)
BARAKAR RIVER		
DHN_BR_PRE_01	94.06	94.92
DHN_BR_PRE_02	96.57	97.35
DHN_BR_PRE_03	97.73	98.23
DHN_BR_PRE_04	95.77	96.15
DHN_BR_PRE_05	97.38	97.57
DHN_BR_PRE_06	99.24	99.43
DHN_BR_PRE_07	149.07	149.67
DHN_BR_PRE_08	154.09	154.24
DAMODAR RIVER		
DHN_DR_PRE_01	130.51	130.64
DHN_DR_PRE_02	133.01	133.41
DHN_DR_PRE_03	134.72	134.99
DHN_DR_PRE_04	138.48	138.61
DHN_DR_PRE_05	142.30	142.45
DHN_DR_PRE_06	144.06	144.21
DHN_DR_PRE_07	147.00	147.14
DHN_DR_PRE_08	150.76	150.88
DHN_DR_PRE_09	152.44	152.51
DHN_DR_PRE_10	152.58	152.89
DHN_DR_PRE_11	154.17	154.64
DHN_DR_PRE_12	156.42	157.05
JAMUNIYA RIVER		
DHN_JM_PRE_01	221.72	221.83
DHN_JM_PRE_02	213.79	213.92
DHN_JM_PRE_03	211.57	211.99
DHN_JM_PRE_04	200.40	200.43
KHUDIYA RIVER		
DHN_KH_PRE_01	98.98	99.48
DHN_KH_PRE_02	102.95	103.16
DHN_KH_PRE_03	103.86	103.96

ZONE WISE DETAILS

NAME OF RIVER	UIN OF SAND BAR	GEO-COORDINATE	AREA IN HA
DAMODAR RIVER	DHN_DR_ZONE_01	X-23°39'10.65"N Y-86°26'27.15"E Z-136	116.89
		X-23°38'30.17"N Y-86°28'38.01"E Z-131M	
		X-23°38'17.95"N Y-86°28'38.30"E Z-129M	
		X-23°39'3.77"N Y-86°26'24.72"E Z-138M	
	DHN_DR_ZONE_02	X-23°40'15.64"N Y-86°23'52.19"E Z-136M	35.84
		X-23°40'7.38"N Y-86°24'47.48"E Z-135M	
		X-23°40'0.32"N Y-86°24'40.79"E Z-134M	
		X-23°40'9.56"N Y-86°23'53.93"E Z-133M	
	DHN_DR_ZONE_03	X-23°40'13.92"N Y-86°23'45.39"E Z-135M	82.08
		X-23°40'6.97"N Y-86°23'44.43"E Z-134M	
		X-23°41'30.73"N Y-86°22'41.42"E Z-138M	
		X-23°41'36.19"N Y-86°22'43.27"E Z-137M	
	DHN_DR_ZONE_04	X-23°41'37.20"N Y-86°22'39.90"E Z-138M	60.84
		X-23°41'31.49"N Y-86°22'37.54"E Z-140M	
		X-23°42'48.52"N Y-86°21'58.72"E Z-144M	
		X-23°42'43.13"N Y-86°21'58.09"E Z-139M	

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	DHN_DR_ZONE_05	X-23°42'53.02"N Y-86°21'10.11"E Z-144M	10.81
		X-23°42'46.56"N Y-86°21'9.10"E Z-145	
		X-23°42'48.89"N Y-86°20'46.65"E Z-143M	
		X-23°42'53.49"N Y-86°20'45.81"E Z-144M	
	DHN_DR_ZONE_06	X-23°42'32.87"N Y-86°20'33.57"E Z-146M	51.04
		X-23°42'31.11"N Y-86°20'38.57"E Z-145M	
		X-23°42'58.55"N Y-86°19'5.53"E Z-144M	
		X-23°42'55.27"N **Y**-86°19'1.40"E **Z**-143M	
	DHN_DR_ZONE_07	X-23°43'13.00"N Y-86°17'21.12"E Z-153M	19.40
		X-23°43'9.05"N Y-86°17'21.27"E Z-151M	
		X-23°42'51.91"N Y-86°16'31.40"E Z-149	
		X-23°42'48.47"N Y-86°16'33.37"E Z-146M	
	DHN_DR_ZONE_08	X-23°42'51.00"N Y-86°16'27.49"E Z-152M	8.78
		X-23°42'47.73"N Y-86°16'28.88"E Z-145M	
		X-23°42'37.60"N Y-86°15'57.76"E Z-151M	
		X-23°42'40.32"N Y-86°15'57.20"E Z-155M	
	DHN_DR_ZONE_09	X-23°42'42.06"N Y-86°15'24.49"E Z-154M	23.32
		X-23°42'37.39"N Y-86°15'23.18"E Z-150	
		X-23°42'44.86"N Y-86°14'31.85"E Z-157M	

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		X-23°42'40.69"N Y-86°14'31.02"E Z-155M	
	DHN_DR_ZONE_10	X-23°42'44.40"N Y-86°14'25.97"E Z-159M	14.37
		X-23°42'40.24"N Y-86°14'26.15"E Z-156M	
		X-23°42'40.69"N Y-86°13'50.29"E Z-157	
		X-23°42'35.62"N Y-86°13'50.88"E Z-153M	
	DHN_DR_ZONE_11	X-23°42'39.62"N Y-86°13'47.99"E Z-155M	51.45
		X-23°42'34.70"N Y-86°13'48.52"E Z-152M	
		X-23°42'58.04"N Y-86°12'8.94"E Z-157M	
		X-23°43'3.54"N Y-86°12'12.51"E Z-159M	
	DHN_DR_ZONE_12	X-23°43'7.13"N Y-86°12'2.81"E Z-161M	76.74
		23°43'2.21"N 86°11'59.89"E Z-153M	
		X-23°43'40.65"N Y-86°10'46.46"E Z-162M	
		X-23°43'35.22"N Y-86°10'42.40"E Z-159M	
KHUDIA RIVER	DHN_KH_ZONE_01	X-23°42'7.97"N Y-86°47'6.73"E Z-98M	22.67
		X-23°42'5.98"N Y 86°47'6.82"E Z-97M	
		X-23°42'53.46"N Y 86°46'13.67"E Z-106M	
		X-23°42'51.93"N Y 86°46'13.02"E Z-105	
	DHN_KH_ZONE_02	X-23°43'24.72"N Y-86°45'58.76"E Z-104M	6.09
		X-23°43'24.79"N Y-86°45'55.82"E Z-103	
		X-23°43'44.44"N Y-86°45'59.90"E Z-104M	

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		X-23°43'42.67"N Y-86°46'2.37"E Z-105	
	DHN_KH_ZONE_03	X-23°43'54.09"N Y-86°46'2.96"E Z-105	8.79
		X-23°43'55.14"N Y-86°46'5.24"E Z-105	
		X-23°44'15.85"N Y-86°45'37.05"E Z-107M	
		X-23°44'12.90"N Y-86°45'37.31"E Z-107M	
BARAKAR RIVER	DHN_BR_ZONE_01	X-23°41'39.09"N Y- 86°48'9.81"E Z-95M	87.12
		X-23°41'33.21"N Y-86°47'57.40"E Z-93M	
		X-23°43'3.72"N Y-86°47'58.93"E Z- 94M	
		X-23°43'3.38"N Y-86°47'54.54"E Z-95M	
	DHN_BR_ZONE_02	X-23°43'33.63"N Y-86°48'14.73"E Z-96	24.84
		X-23°43'38.75"N Y-86°48'5.52"E Z-98M	
		X-23°44'5.68"N Y-86°48'21.68"E Z-99M	
		X-23°44'3.84"N Y-86°48'29.86"E Z-99M	
	DHN_BR_ZONE_03	X-23°44'5.99"N Y-86°48'29.85"E Z-96M	20.72
		X-23°44'8.25"N Y-86°48'23.15"E Z-97M	
		X-23°44'36.87"N Y-86°48'29.58"E Z-95M	
		X-23°44'36.31"N Y-86°48'35.62"E Z-103M	
	DHN_BR_ZONE_04	X-23°44'41.04"N Y-86°48'35.12"E Z-97M	16.28
		X-23°44'42.91"N Y-86°48'28.78"E Z-100M	
		X-23°45'0.13"N Y-86°49'5.82"E Z-98M	

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		X-23°44'51.97"N Y-86°48'56.46"E Z-95M	
	DHN_BR_ZONE_05	X-23°45'22.79"N Y-86°49'25.10"E Z-99M	23.33
		X-23°45'24.15"N Y-86°49'33.01"E Z-98M	
		X-23°45'56.03"N Y86°49'34.63"E Z-99M	
		X-23°45'54.35"N Y-86°49'26.48"E Z-99M	
	DHN_BR_ZONE_06	X-23°46'0.30"N Y-86°49'26.52"E Z-99M	25.66
		X-23°46'0.75"N Y-86°49'33.58"E Z-99M	
		X-23°46'40.73"N Y-86°49'19.86"E Z-101M	
		X-23°46'42.25"N Y-86°49'27.11"E Z-104M	
	DHN_BR_ZONE_07	X-23°54'26.13"N Y-86°42'18.02"E Z-150M	35.00
		X-23°54'21.48"N Y-86°42'16.19"E Z-148M	
		X-23°54'43.93"N Y-86°41'22.19"E Z-149M	
		X-23°54'39.63"N Y-86°41'21.06"E Z-148M	
	DHN_BR_ZONE_08	X-23°55'31.26"N Y-86°39'27.17"E Z-155M	54.13
		X-23°55'26.45"N Y-86°39'24.91"E Z-151M	
		X-23°56'26.15"N Y-86°38'6.56"E Z-158M	
		X-23°56'22.13"N Y-86°38'1.63"E Z-162	
JAMUNIYA RIVER	DHN_JM_ZONE_01	X-23°52'54.78"N Y-86° 6'54.84"E Z-220M	17.17
		X-23°52'54.59"N Y-86° 6'51.90"E Z-223M	
		X-23°53'13.44"N Y-86° 6'47.52"E Z-223M	

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		X-23°53'10.76"N Y-86° 6'47.62"E Z-224M	
	DHN_JM_ZONE_02	X-23°51'40.96"N Y-86° 8'13.06"E Z-214M	4.24
		X-23°51'39.28"N Y-86° 8'12.60"E Z-213	
		X-23°51'22.51"N Y-86° 8'16.25"E Z-214M	
		X-23°51'21.51"N Y-86° 8'18.18"E Z-214	
	DHN_JM_ZONE_03	X-23°50'42.73"N Y-86° 8'24.48"E Z-214M	3.54
		X-23°50'44.48"N Y-86° 8'23.57"E Z-212M	
		X-23°50'57.75"N Y-86° 8'27.58"E Z-212M	
		X-23°50'56.93"N Y-86° 8'26.25"E Z-213M	
	DHN_JM_ZONE_04	X-23°49'53.74"N Y-86° 9'0.08"E Z-201M	1.95
		X-23°49'52.47"N Y-86° 9'0.65"E Z-201M	
		X-23°49'51.41"N Y-86° 9'11.57"E Z-201M	
		X-23°49'50.87"N Y-86° 9'10.52"E Z-201M	
TOTAL NO. OF ZONE			**27**
TOTAL AREA OF ZONE IN HA.			**903.11**

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NO MINING ZONE DETAILS OF DHANBAD DISTRICT WITH BRIDGE NAME AND GEO-COORDINATES

NO MINING ZONE DETAILS OF DHANBAD				
SI. NO.	**RIVER NAME**	**BRIDGE NAME/NEAREST VILLAGE**	**GEO-CORDINATES**	**AREA IN HA.**
1	DAMODAR RIVER	SUDAMDIH RAILWAY BRIDGE	**1.** 23°39'9.38"N 86°25'48.80"E **2.** 23°39'18.03"N 86°25'50.31"E **3.** 23°39'0.34"N 86°26'57.88"E **4.** 23°38'53.47"N 86°26'54.80"E	47.82
2	DAMODAR RIVER	BIRSA BRIDGE	**1.** 23°39'37.83"N 86°25'6.23"E **2.** 23°39'43.64"N 86°25'12.86"E **3.** 23°40'20.27"N 86°24'14.99"E **4.** 23°40'12.12"N 86°24'11.33"E	18.95
3	DAMODAR RIVER	BINOD BIHARI MAHTO BRIDGE	**1.** 23°41'40.44"N 86°22'16.82"E **2.** 23°41'41.28"N 86°22'31.16"E **3.** 23°42'44.88"N 86°22'19.47"E **4.** 23°42'41.36"N 86°22'5.57"E	18.48
4	DAMODAR RIVER	SHAKTI BRIDGE	**1.** 23°43'9.33"N 86°17'27.01"E **2.** 23°43'13.97"N 86°17'27.75"E **3.** 23°43'15.20"N 86°18'36.44"E **4.** 23°43'9.94"N 86°18'37.35"E	35.22
5	DAMODAR RIVER	TALMOCHO BRIDGE	**1.** 23°43'8.60"N 86°11'32.13"E **2.** 23°43'21.30"N 86°11'37.80"E **3.** 23°42'54.16"N 86°12'40.91"E **4.** 23°42'47.85"N 86°12'38.19"E	24.86
6	DAMODAR RIVER	KUMHARI, KUMRI, DAMODAR BRIDGE	**1.** 23°42'35.86"N 86°13'32.21"E **2.** 23°42'40.39"N 86°13'32.26"E **3.** 23°42'43.14"N 86°14'6.19"E **4.** 23°42'37.85"N 86°14'7.17"E	6.92
7	KHUDIA & BARAKAR RIVER	LUCHIBAD	**1.** 23°42'44.30"N 86°46'26.46"E **2.** 23°42'47.68"N 86°46'28.14"E **3.** 23°43'8.11"N 86°46'4.34"E **4.** 23°43'3.77"N 86°45'58.98"E	9.35
8	KHUDIA & BARAKAR RIVER	JALALPUR	**1.** 23°42'7.33"N 86°47'24.79"E **2.** 23°42'13.68"N 86°47'23.25"E **3.** 23°42'12.06"N 86°46'50.71"E **4.** 23°42'7.07"N 86°46'49.92"E	9.05
9	KHUDIA RIVER	JAMDAHI BRIDGE	**1.** 23°43'15.75"N 86°45'58.07"E **2.** 23°43'15.53"N 86°46'2.44"E **3.** 23°44'14.10"N 86°45'42.29"E **4.** 23°44'11.75"N 86°45'39.04"E	27.99
10	BARAKAR RIVER	BARAKAR RIVER BRIDGE	**1.** 23°43'39.37"N 86°48'6.21"E **2.** 23°43'34.64"N 86°48'18.53"E **3.** 23°44'52.81"N 86°49'7.76"E **4.** 23°45'0.78"N86°49'2.26"E	77.33

11	BARAKAR RIVER	BARAKAR NATIONAL BRIDGE	**1.** 23°45'26.75"N 86°49'24.87"E **2.** 23°45'27.49"N 86°49'39.69"E **3.** 23°46'30.44"N 86°49'30.63"E **4.** 23°46'29.72"N 86°49'22.44"E	56.63
12	BARAKAR RIVER	BEJRA BRIDGE	**1.** 23°55'14.44"N 86°39'59.20"E **2.** 23°55'21.97"N 86°40'1.94"E **3.** 23°55'51.71"N 86°39'3.14"E **4.** 23°55'45.50"N 86°38'57.57"E	43.55

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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)

BARAKAR RIVER OF DHANBAD 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	AREA IN HA.	THICKNESS OF SAND IN MTR	VOLUME IN CUM	RATE OF REPLEN ISHMENT%
1	DHN_BR_PRE_01	94.06	871244	401610	DHN_BR_POS_01	94.92	871247	87.12	0.86	749272	86.57
2	DHN_BR_PRE_02	96.57	248441	108520	DHN_BR_POS_02	97.35	248443	24.84	0.78	193786	78.57
3	DHN_BR_PRE_03	97.73	207204	64752	DHN_BR_POS_03	98.23	207205	20.72	0.50	103603	60.00
4	DHN_BR_PRE_04	95.77	162810	38977	DHN_BR_POS_04	96.15	162812	16.28	0.38	61869	58.73
5	DHN_BR_PRE_05	97.38	233342	29261	DHN_BR_POS_05	97.57	233345	23.33	0.19	44336	51.52
6	DHN_BR_PRE_06	99.24	256624	32912	DHN_BR_POS_06	99.43	256625	25.66	0.19	48759	48.15
7	DHN_BR_PRE_07	149.07	349999	129150	DHN_BR_POS_07	149.67	350000	35.00	0.60	210000	62.60
8	DHN_BR_PRE_08	154.09	541320	58463	DHN_BR_POS_08	154.24	541322	54.13	0.15	81198	38.89
				863645				**287.10**		**1492822**	

DAMODAR RIVER OF DHANBAD 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	AREA IN HA.	THICKNESS OF SAND IN MTR	VOLUME IN CUM	RATE OF REPLEN ISHMENT%
1	DHN_DR_PRE_01	130.51	1168864	113965	DHN_DR_POS_01	130.64	1168868	116.89	0.13	151953	33.33
2	DHN_DR_PRE_02	133.01	358372	88877	DHN_DR_POS_02	133.41	358374	35.84	0.40	143350	61.29
3	DHN_DR_PRE_03	134.72	820784	139616	DHN_DR_POS_03	134.99	820787	82.08	0.27	221612	58.73
4	DHN_DR_PRE_04	138.48	608380	55916	DHN_DR_POS_04	138.61	608382	60.84	0.13	79090	41.44
5	DHN_DR_PRE_05	142.30	108130	10867	DHN_DR_POS_05	142.45	108133	10.81	0.15	16220	49.25
6	DHN_DR_PRE_06	144.06	510395	49305	DHN_DR_POS_06	144.21	510399	51.04	0.15	76560	55.28

7	DHN_DR_PRE_07	147.00	194005	16840	DHN_DR_POS_07	147.14	194006	19.40	0.14	27161	61.29
8	DHN_DR_PRE_08	150.76	87838	8591	DHN_DR_POS_08	150.88	87840	8.78	0.12	10541	22.70
9	DHN_DR_PRE_09	152.44	233161	11017	DHN_DR_POS_09	152.51	233166	23.32	0.07	16322	48.15
10	DHN_DR_PRE_10	152.58	143735	27849	DHN_DR_POS_10	152.89	143738	14.37	0.31	44559	60.00
11	DHN_DR_PRE_11	154.17	514492	147747	DHN_DR_POS_11	154.64	514494	51.45	0.47	241812	63.67
12	DHN_DR_PRE_12	156.42	767430	285254	DHN_DR_POS_12	157.05	767431	76.74	0.63	483482	69.49
				955844				**551.56**	**2.97**	**1512660**	

JAMUNIYA RIVER OF DHANBAD 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	AREA IN HA.	THICKNESS OF SAND IN MTR	VOLUME IN CUM	RATE OF REPLEN ISHMENT%
1	DHN_JM_PRE_01	221.72	171721	11806	DHN_JM_POS_01	221.83	171726	17.17	0.11	18890	60.00
2	DHN_JM_PRE_02	213.79	42368	3343	DHN_JM_POS_02	213.92	42370	4.24	0.13	5508	64.74
3	DHN_JM_PRE_03	211.57	35408	8849	DHN_JM_POS_03	211.99	35409	3.54	0.42	14872	68.07
4	DHN_JM_PRE_04	200.40	19507	339	DHN_JM_POS_04	200.43	19510	1.95	0.03	585	72.41
				24337				**26.90**		**39855**	

KHUDIYA RIVER OF DHANBAD 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	AREA IN HA.	THICKNESS OF SAND IN MTR	VOLUME IN CUM	RATE OF REPLEN ISHMENT%
1	DHN_KH_PRE_01	98.98	226655	78424	DHN_KH_POS_01	99.48	226659	22.67	0.50	113330	44.51
2	DHN_KH_PRE_02	102.95	60943	10764	DHN_KH_POS_02	103.16	60946	6.09	0.21	12799	18.91
3	DHN_KH_PRE_03	103.86	87932	7184	DHN_KH_POS_03	103.96	87933	8.79	0.10	8793	22.40
				96372				**37.55**		**134921**	

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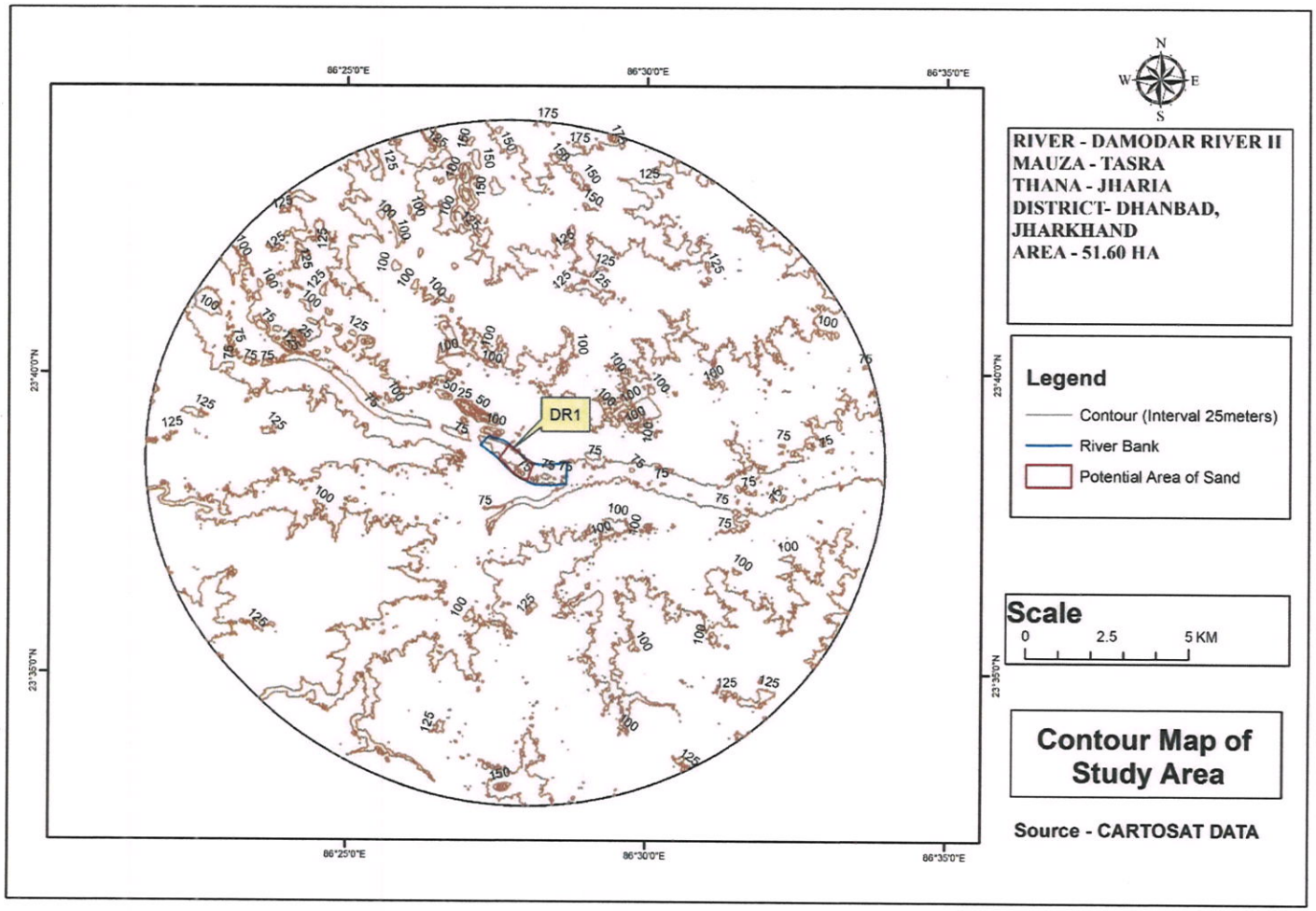
CONTOUR MAP OF PROPOSED POTENTIAL AREA OF SAND DEPOSIT



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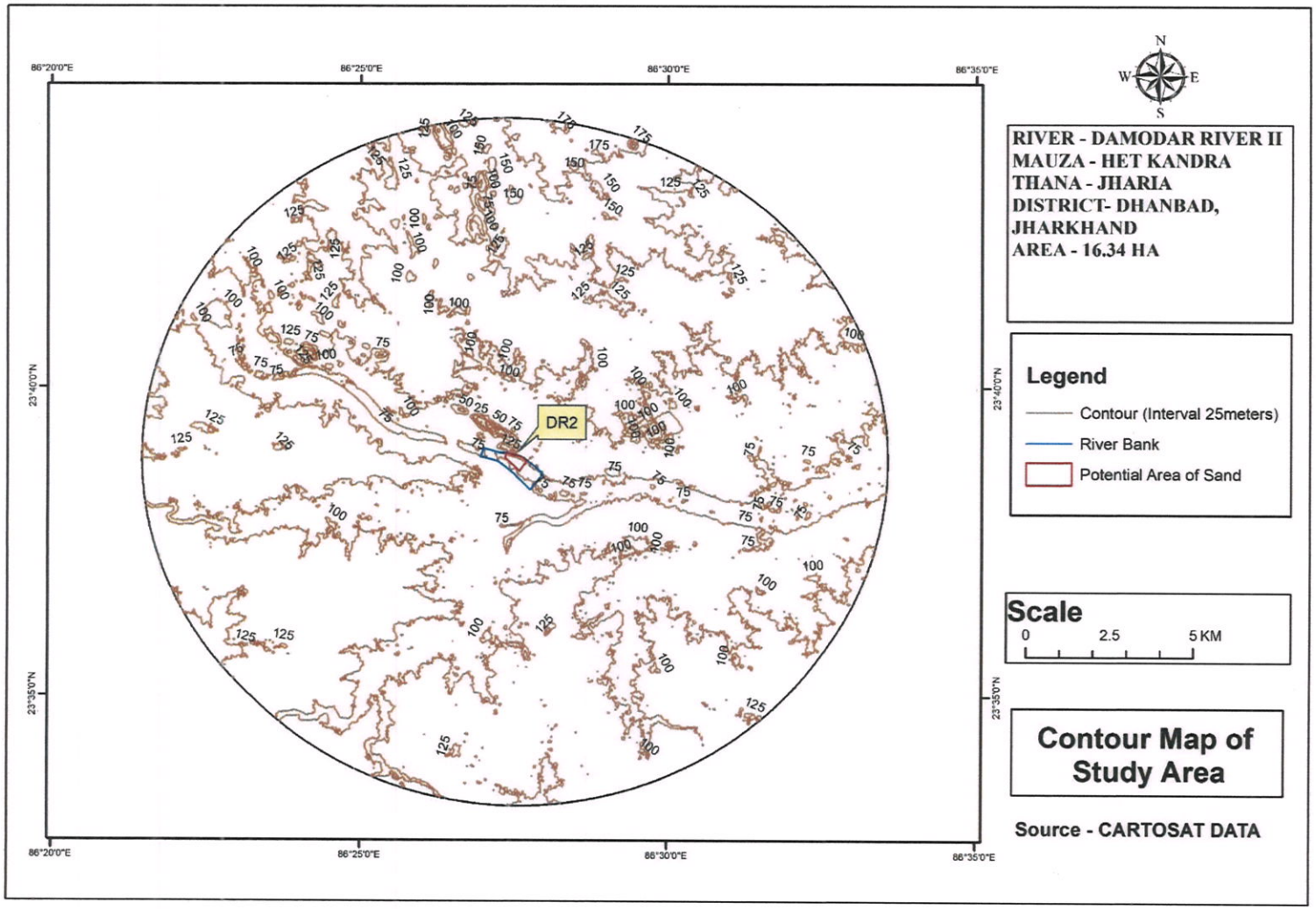

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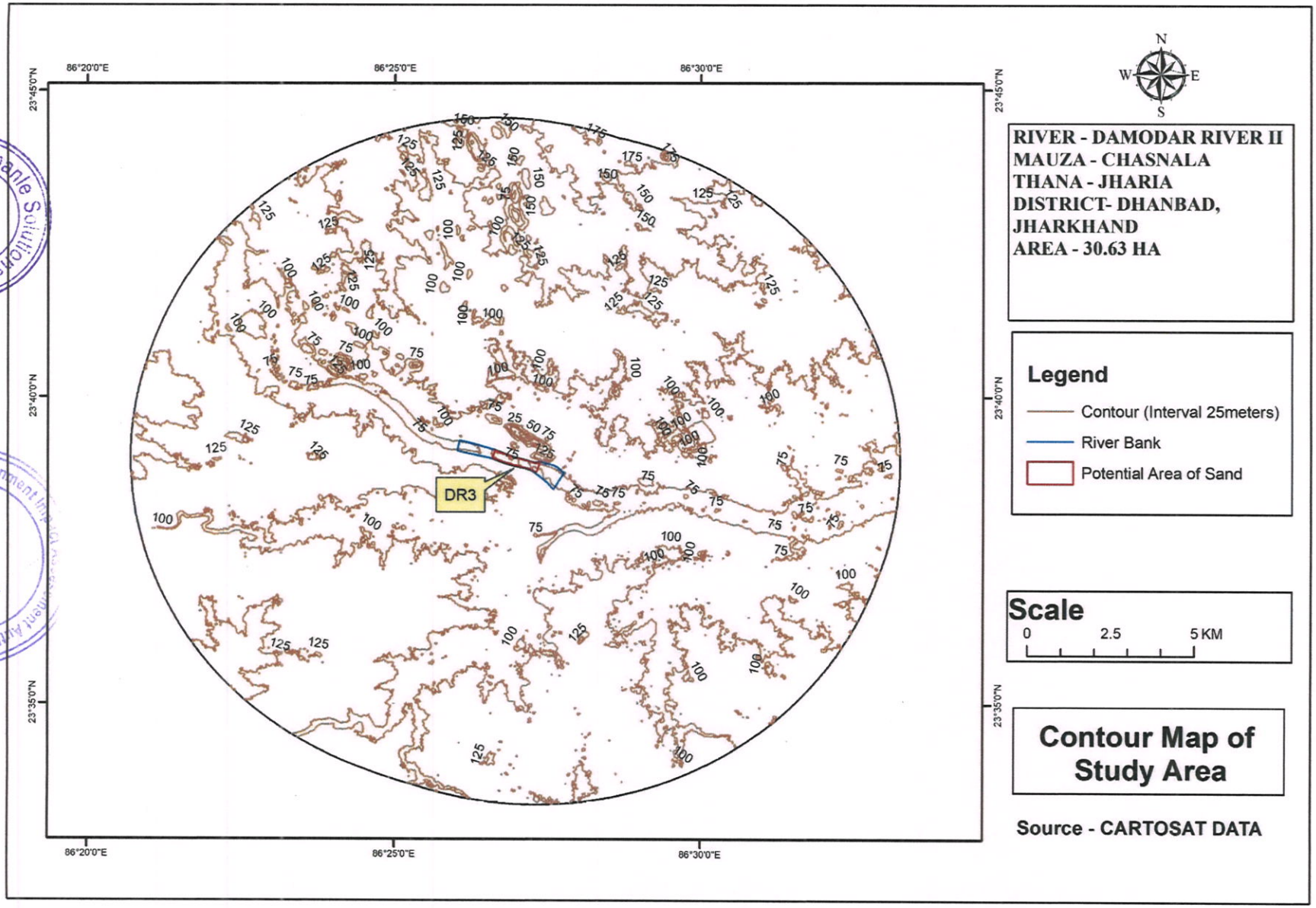

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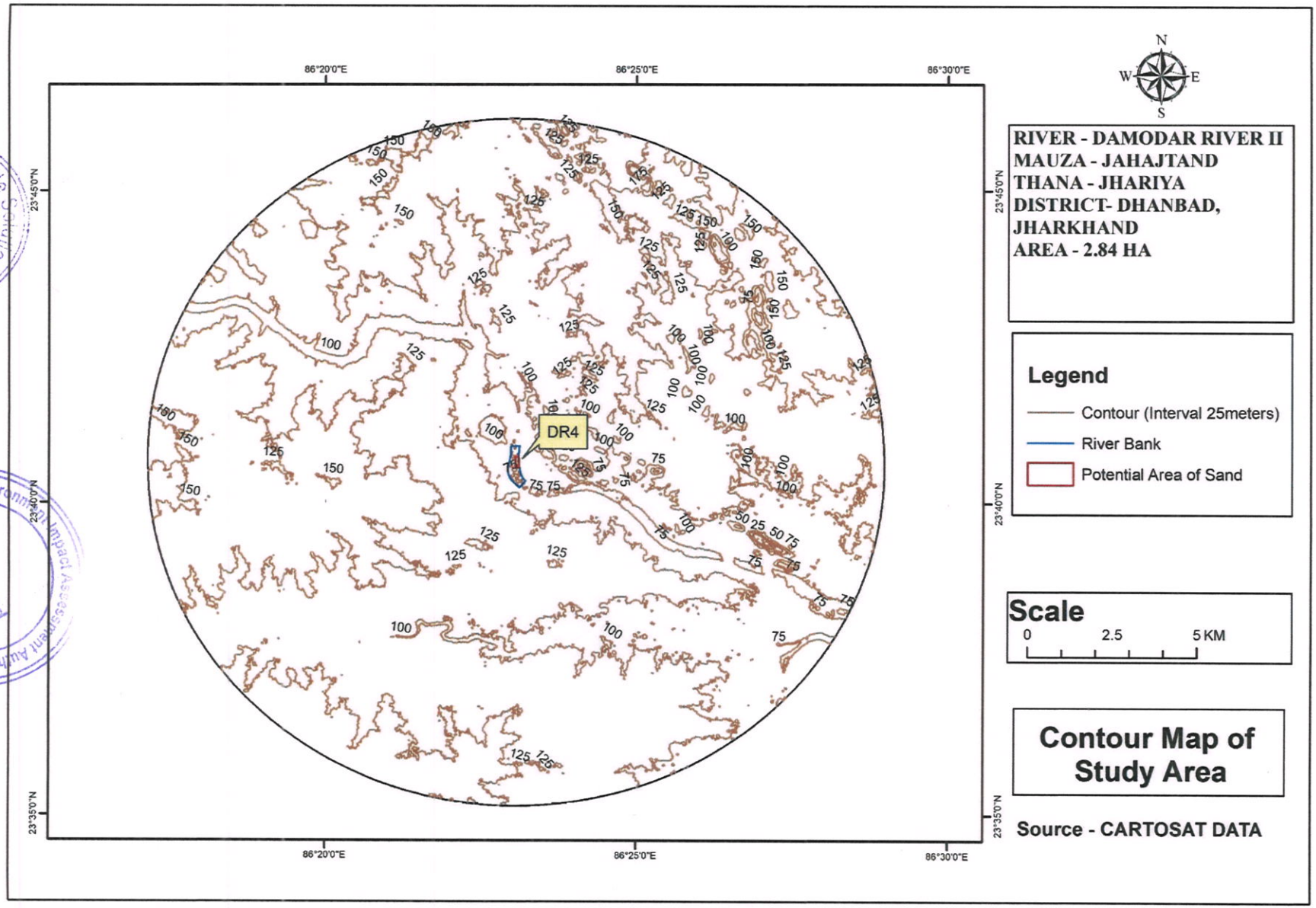

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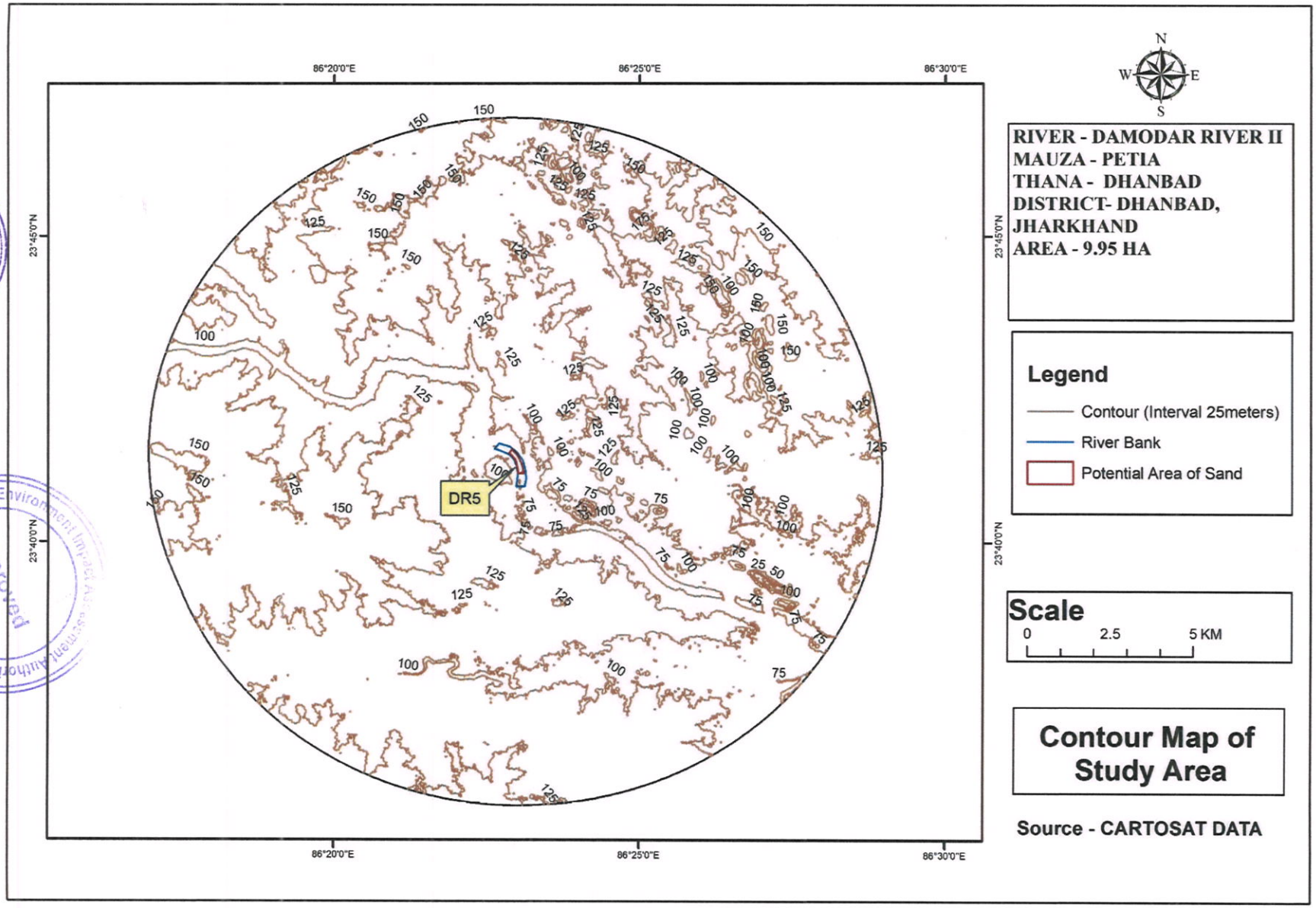

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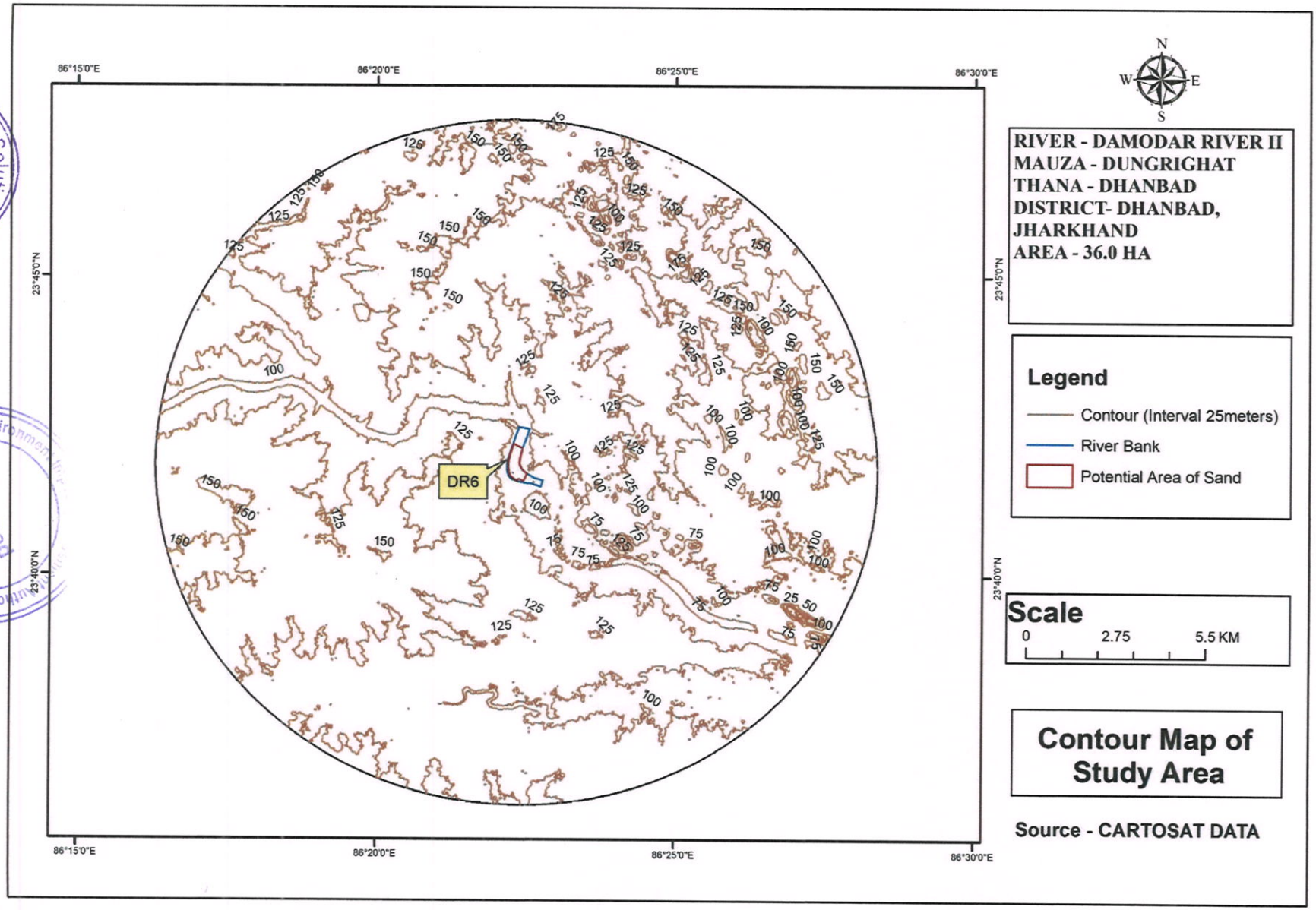

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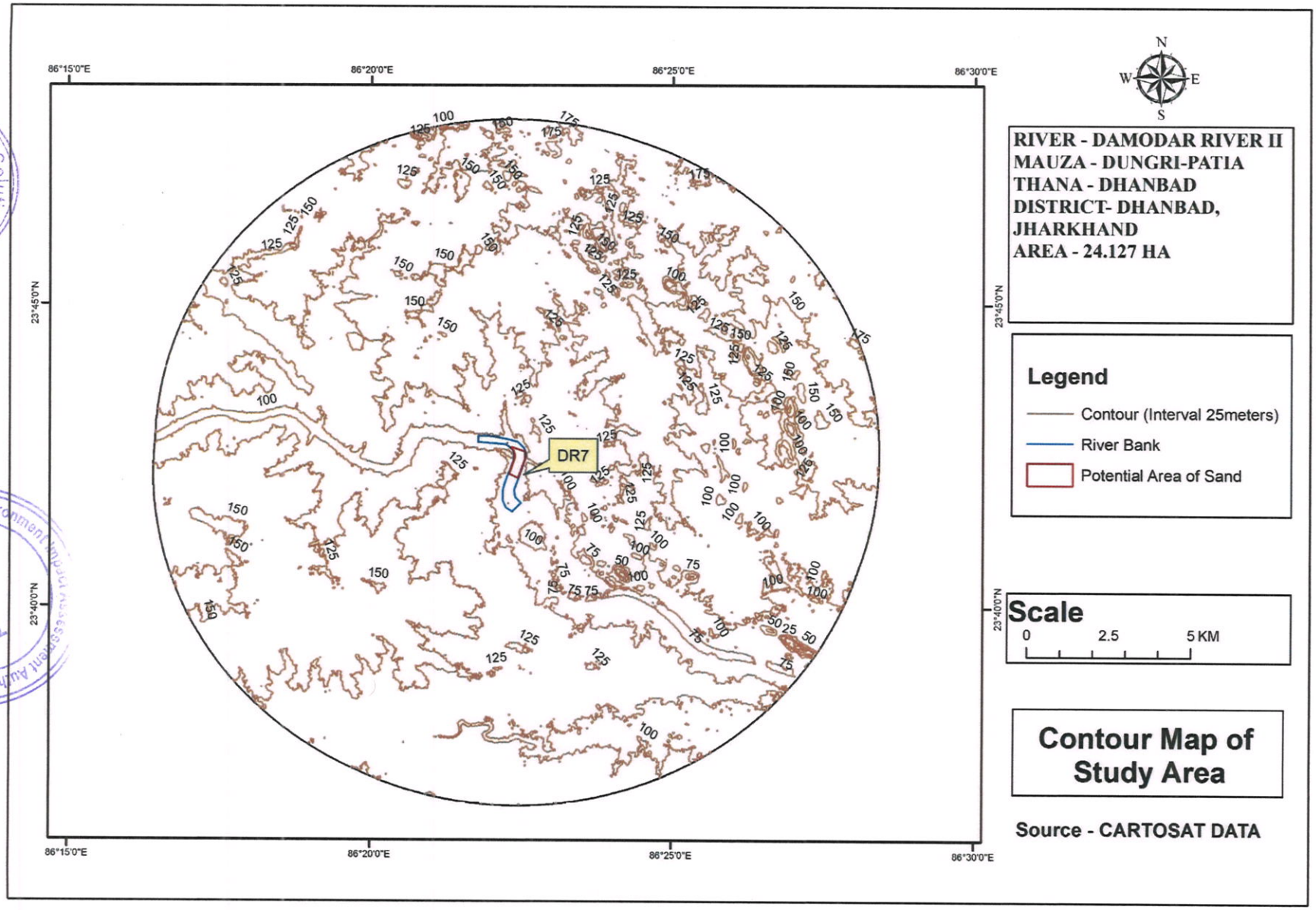

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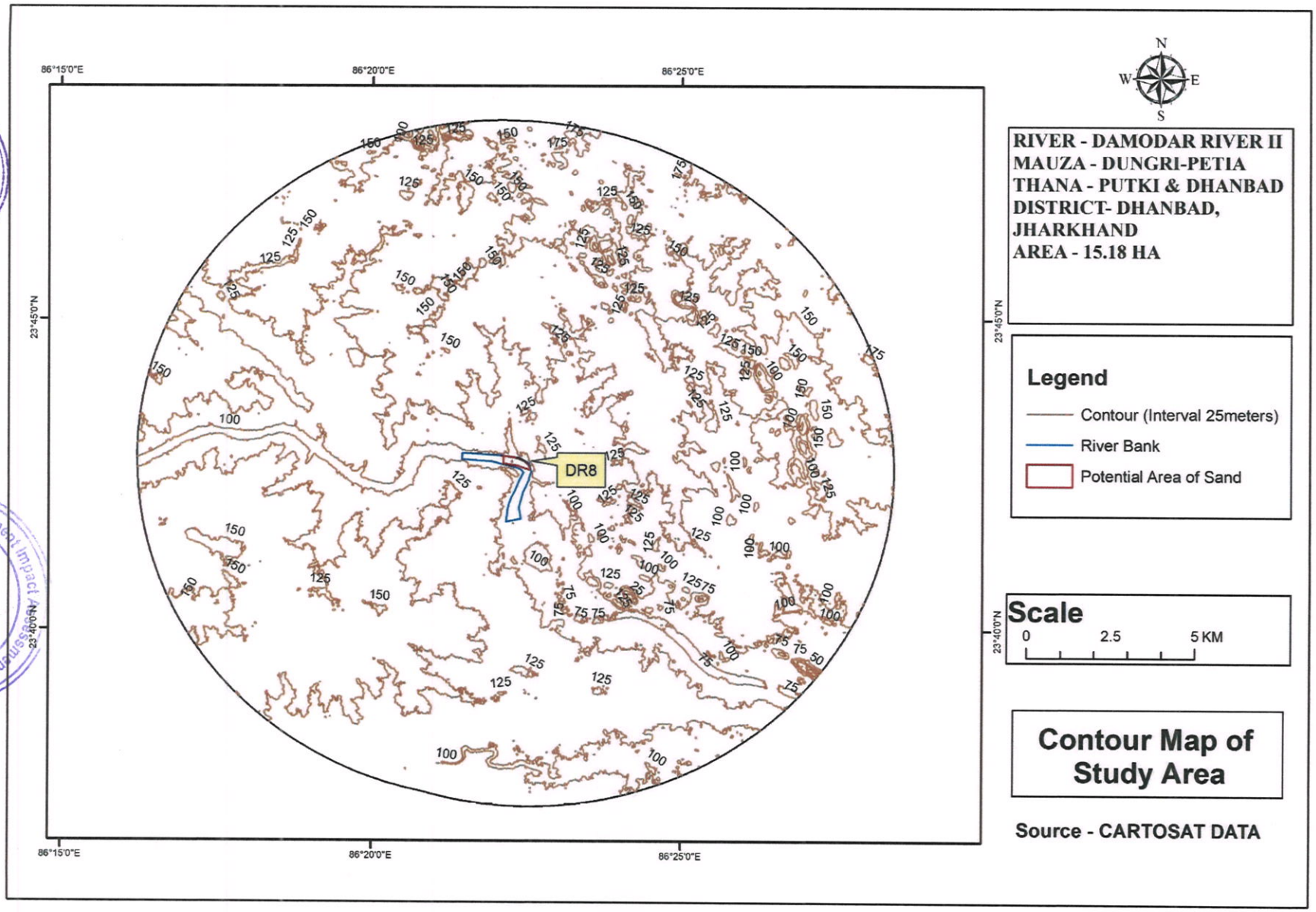

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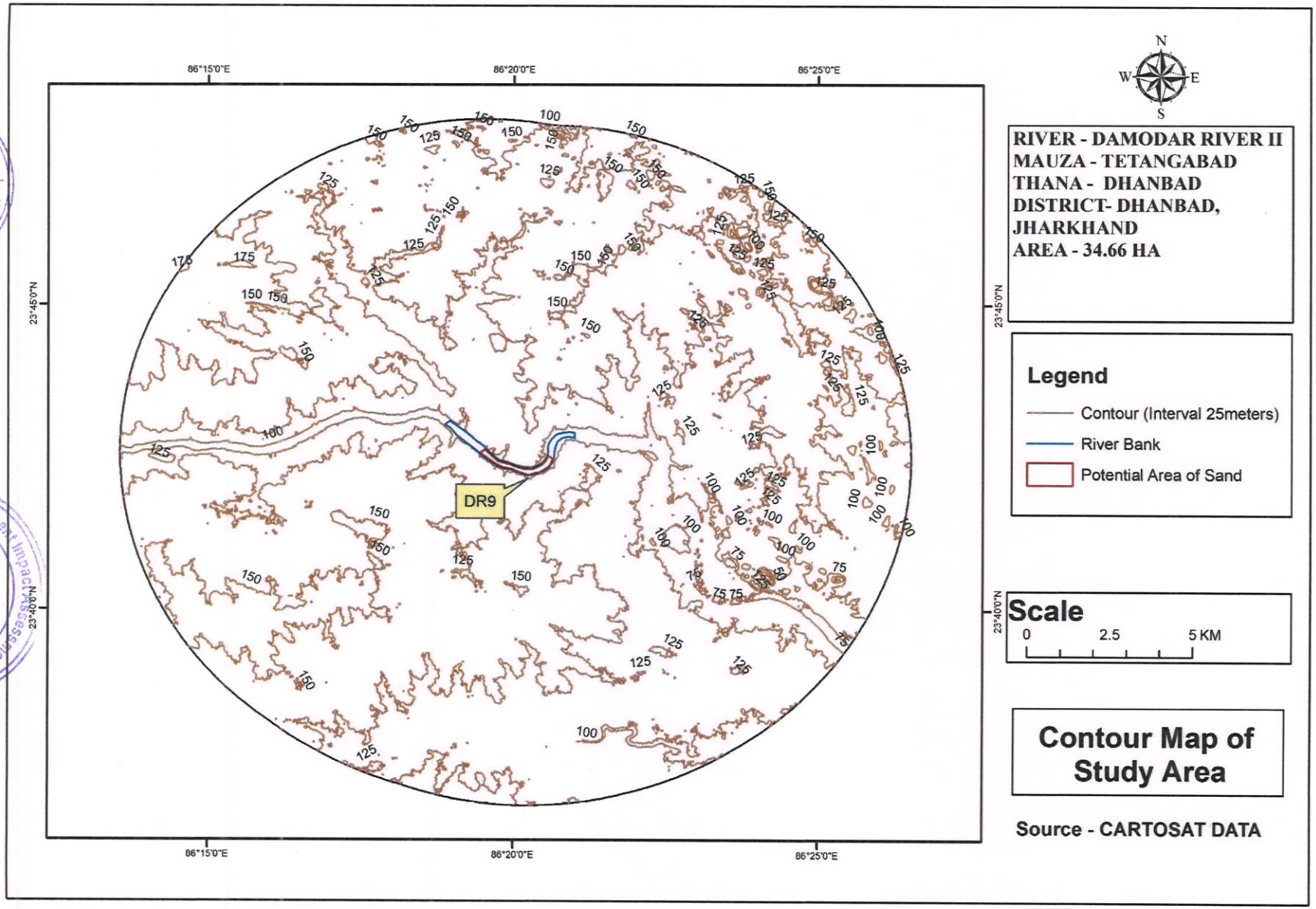

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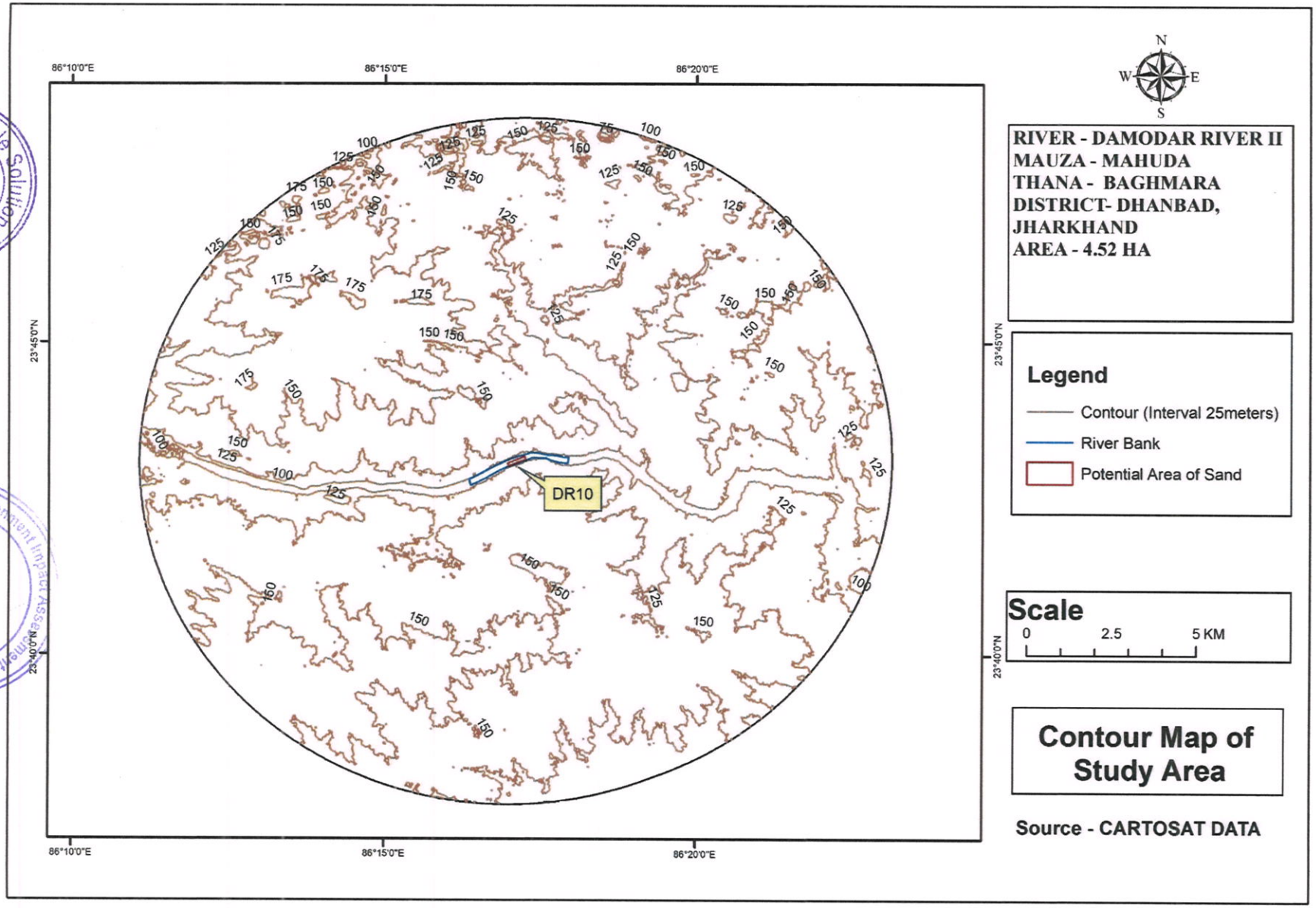

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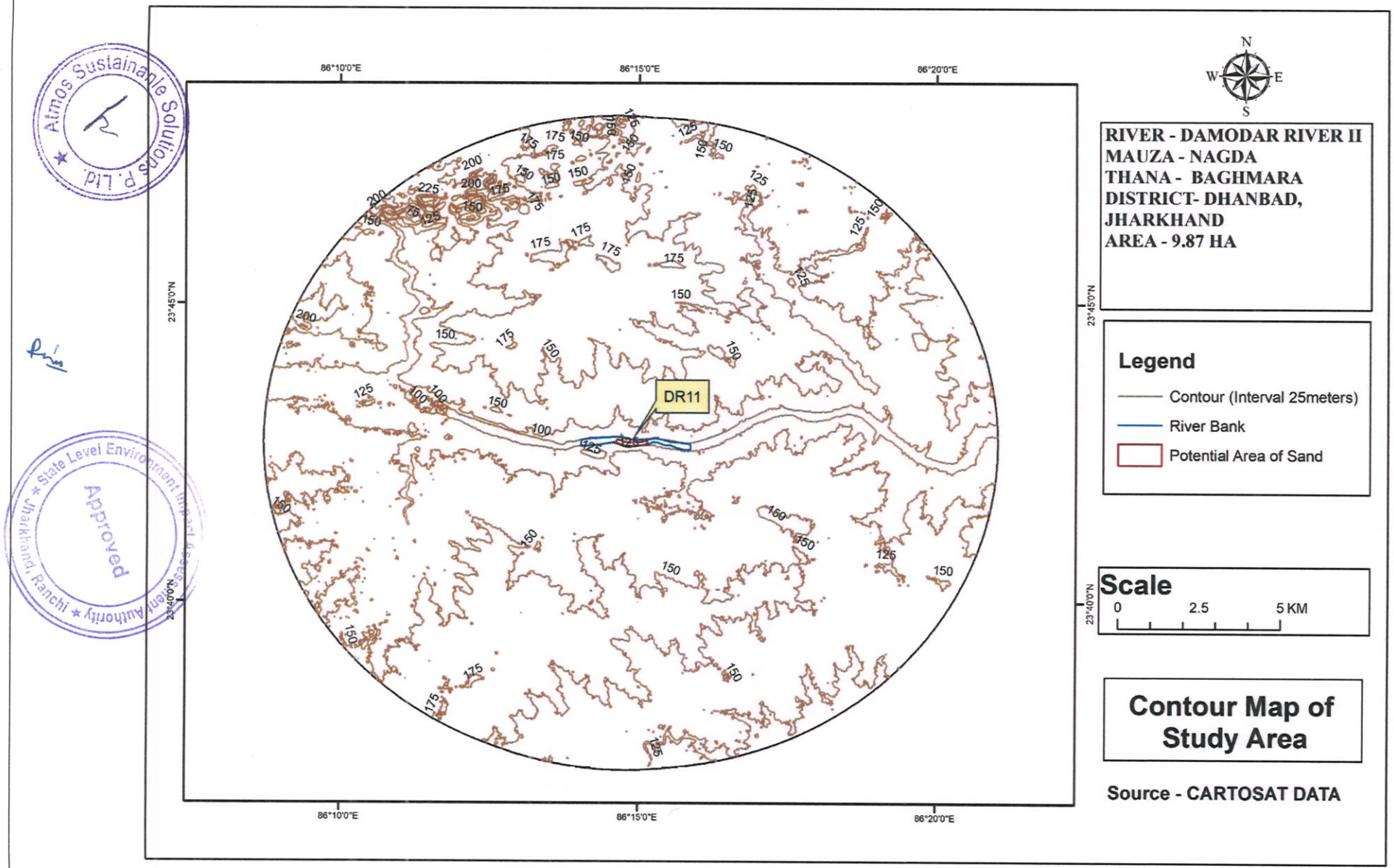

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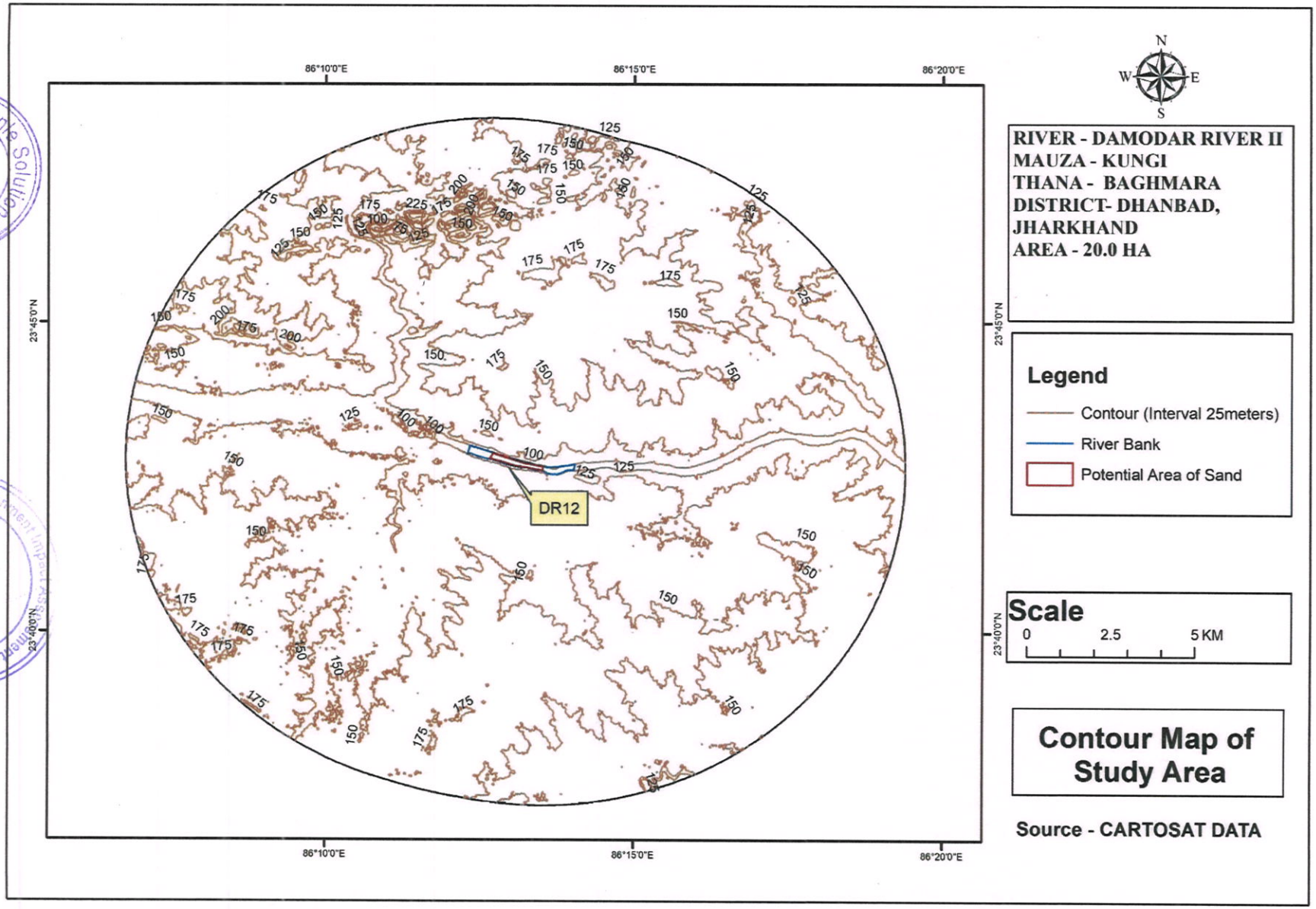

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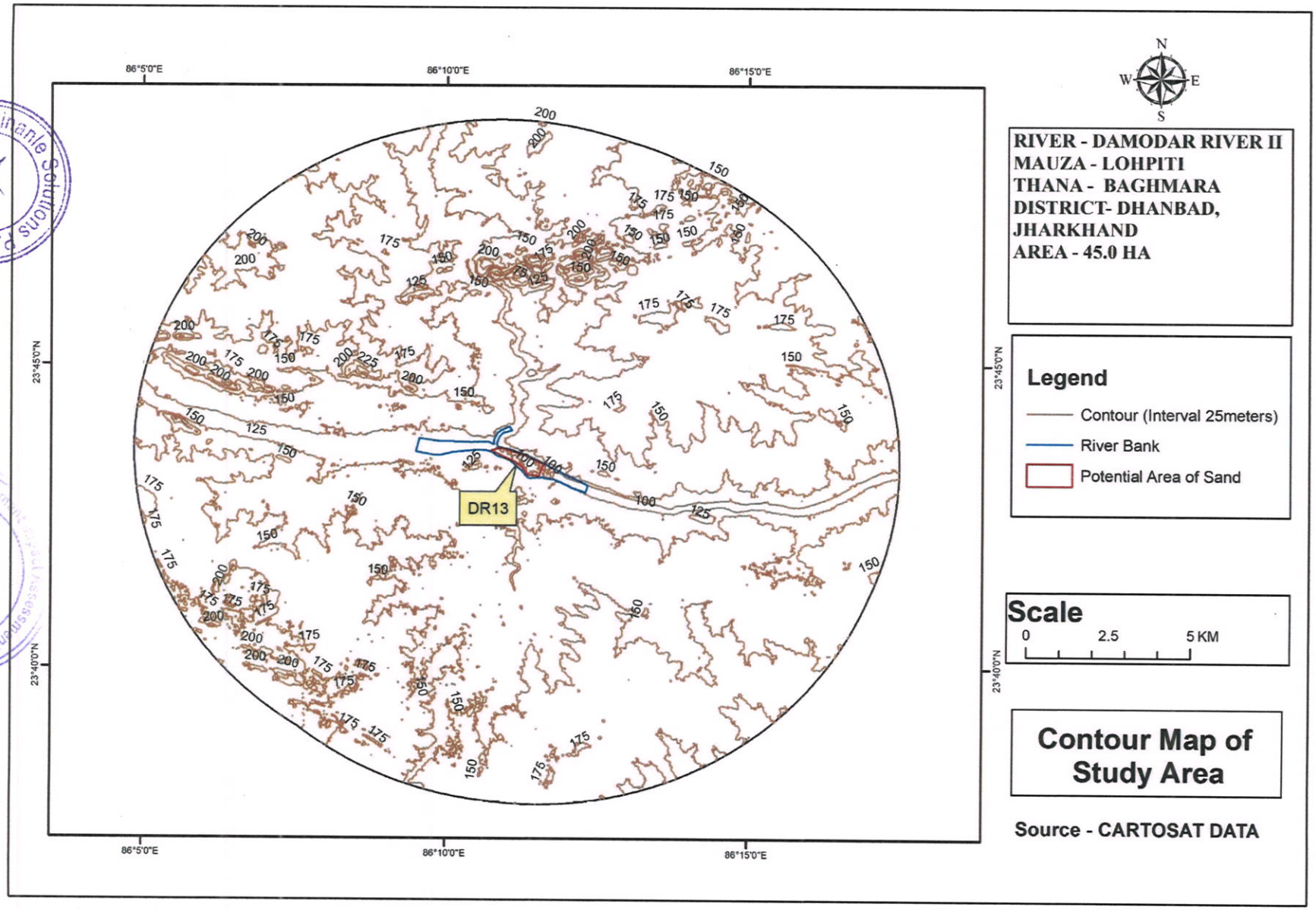

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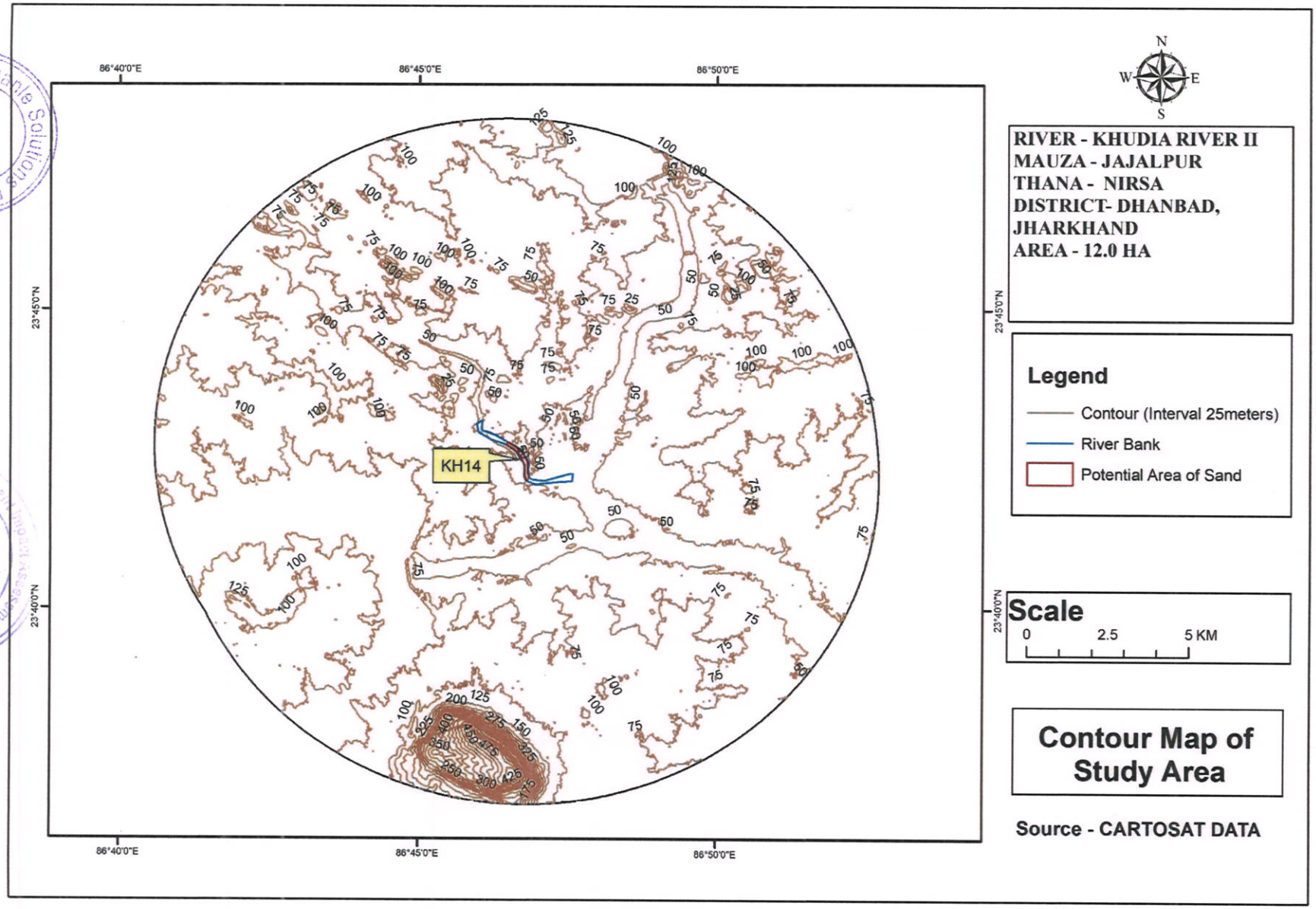

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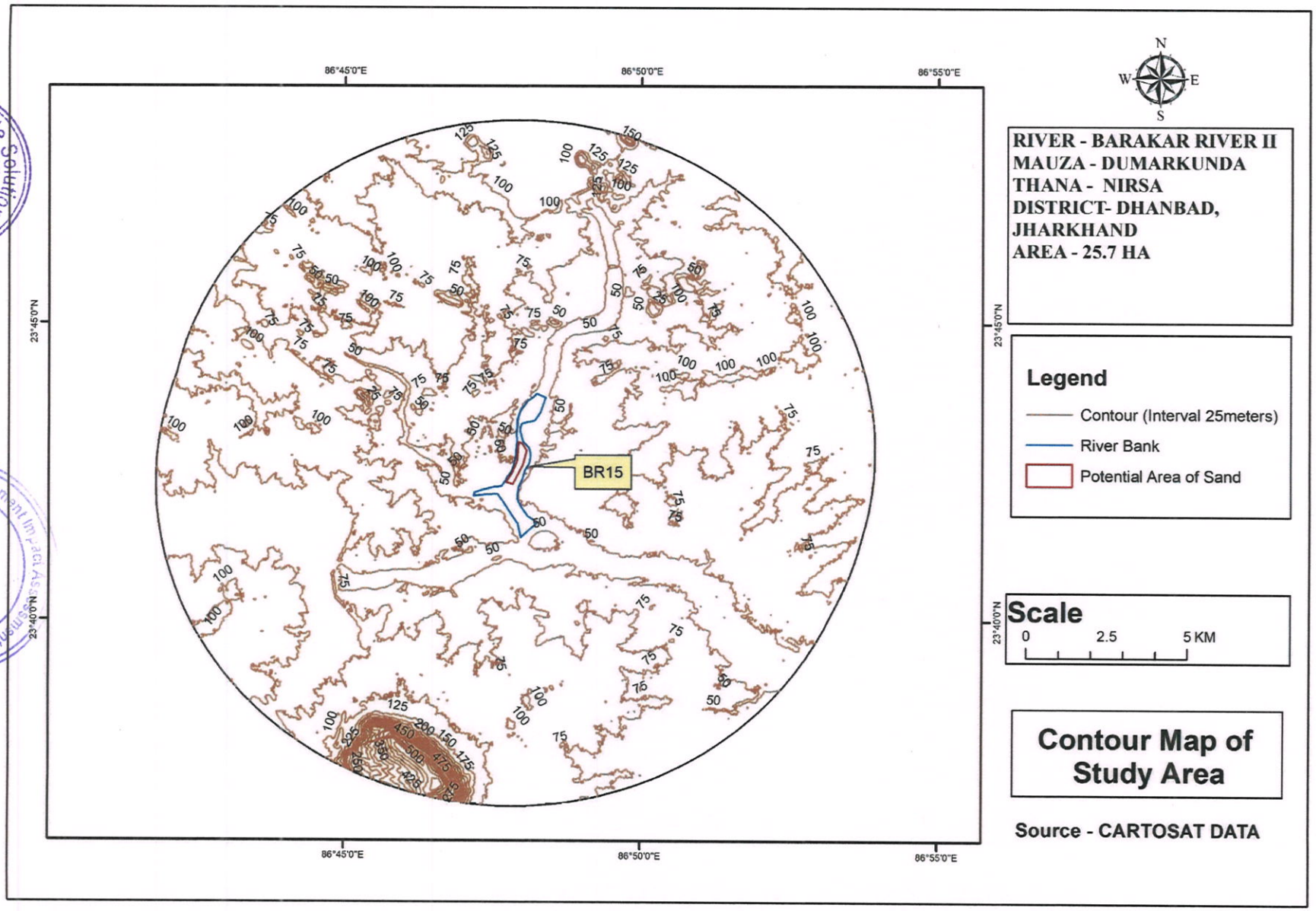

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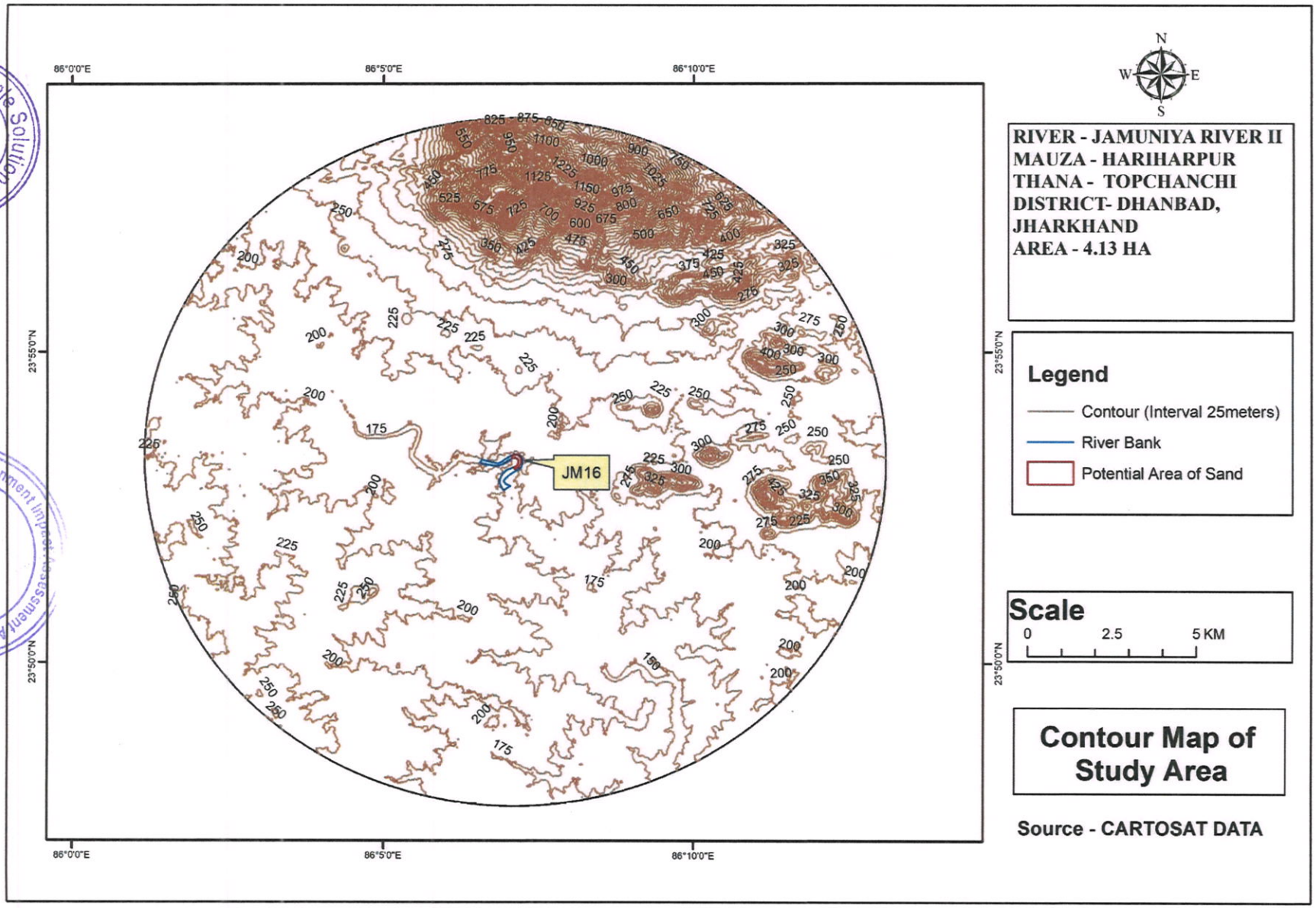

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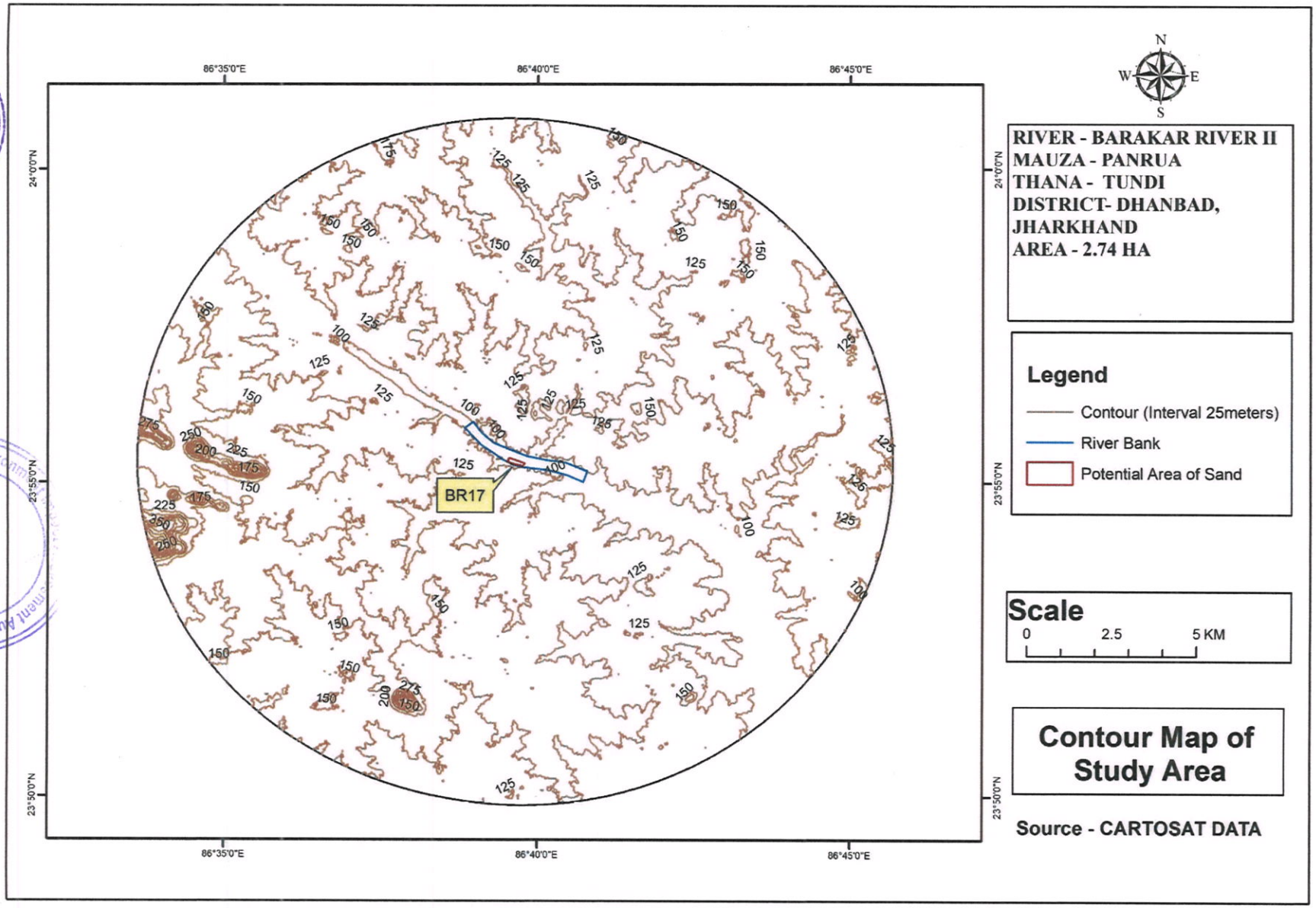

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CHAPTER- 21
DETAILS OF ECO-SENSITIVE AREA, IF ANY, IN THE DISTRICT

Topchanchi Wildlife Sanctuary lies between latitudes 230 50' to 230 58' and Longitudes 86^0 6' to 86^0 15' in Dhanbad district of Jharkhand. Parasnath Wildlife Sanctuary lies between latitudes 23^0 55' to 24^0 20' North and Longitudes 86^0 5' to 86^0 13' East in the south-east part of Giridih District. Parasnath Wildlife Sanctuary & Topchanchi Wildlife Sanctuary occupies 49.33 sq. km. & 12.82 sq. km respectively and both Wild Life Sanctuaries are roughly semi - spherical in shape. The extent of Parasnath Wildlife Sanctuary from East to West is 10. 50 Km & from North to South is 7.00 Km. Similarly the extent of Topchanchi Wildlife Sanctuary from East to West in 6.25 Km & from North to South is 3.75 Km. Both the Sanctuary share common boundary of 3.75 Km. length towards southeastern side of Parasnath Wildlife Sanctuary and so only common eco-sensitive zone is feasible.

The Topchanchi Wild Life Sanctuary has been famous for ideal habitat of Leopards. Topchanchi Wild Life Sanctuary is also famous for Rajdaha reservoir, called "Topchanchi Jheel (lake)". The local & foreign migratory bird visit this Lake specially in month of December & January. The important birds species, spotted frequently are Serpant Eagle, Wood -pecker, Pea-fowl, King fisher, Paradise fly-catcher, Peacock, Koel, Bee- eater, Swift, Lapwing

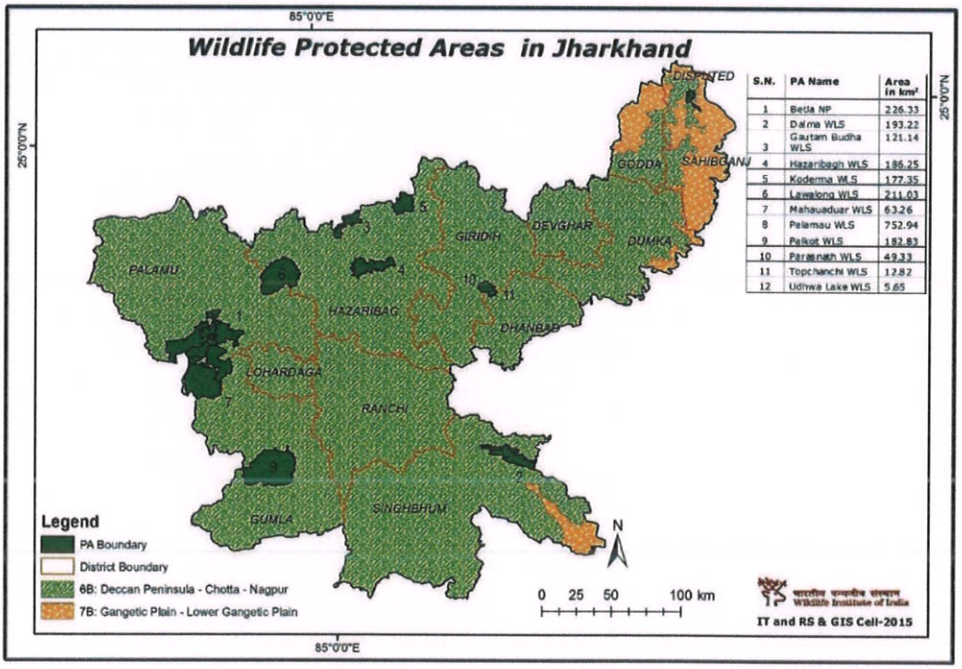

Figure No. 21.1: Wildlife Protected area in Jharkhand

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 50μm (termed Total Suspended Particulate matter, or TSP) can become suspended in the atmosphere, and those with aerodynamic diameters of less than 10μm 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 & during transportation. 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 sand into tippers 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 pollution. Furthermore, these operations disrupt the existing movement of surface water and aquatic life 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 laborer's 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

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.

1.1 WATER ENVIRONMENT: -

MITIGATION MEASURES

- No diversion will be done. There will not be any adverse impact on flow pattern, surface hydrology and ground water regime.
- will be adopted against health risks on account of breeding of vectors in the water bodies created due to excavation.
- Laborers should not be allowed to through trashes in water bodies.
- Utmost care should be taken to minimize or control oil spills or leakage from vehicles used for soil transportation.
- 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.

- Safety barrier zone will be left from both sides of river, which will minimize the chances of bank failure
- 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.

1.2 LAND ENVIRONMENT:

MITIGATION MEASURES

- 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.
- Mining should not exceed beyond the agreed extraction depth.
- Quantities will be strictly limited so that sand accumulation rates are sufficient to avoid extended impacts on channel morphology.
- Loss of habitat is minimized because the river bed mining will be carried only in dry bed which will not disturb the riverine ecosystem

1.3 NOISE ENVIRONMENT:

MITIGATION MEASURES

- Well maintained vehicles should be used in order to reduce the noise during movementof vehicles.
- Regular and proper maintenance of transportation vehicles (trucks, tractor etc.) shouldbe ensured.
- Proper and timely maintenance of machineries.
- The noise levels from all these sources are periodical and restricted to particular operation.

1.4 FLORA AND FAUNA:

MITIGATION MEASURES

- Sediment and erosion control by planting native trees and shrubs to stabilize degradedfarming land.
- Regular monitoring of plants and animals on site.
- Establishing and maintaining habitat corridors.
- Stabilize all slopes, re-vegetating with native species to reduce/avoid erosion.

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 mining 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 reclamation of 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 loadingoperation 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 withwarning 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 undertaken
- 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 themines 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.

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 its 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 bunging 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, 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 Dhanbad 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.

In 2009, the Central Pollution Control Board (CPCB) identified Dhanbad area as one of the "Critically Polluted Areas" (CPA). Also scientific studies including reports of the Central Ground Water Board (CGWB) have indicated ground and surface water pollution. The large number of poorly managed mines in the district have contributed to such severe pollution in the area, also taking a toll on public health.

The public health and healthcare status of Dhanbad district, and particularly the mining-affected areas has been reviewed on the basis of the following key parameters:

a. Disease prevalence.

b. Existing healthcare infrastructure in the district- primary and secondary facilities.

c. Status of available healthcare staff – doctors, health workers etc.

Based on the situation on each of these, the overall gaps in the public healthcare sector have been identified.

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DISEASE PREVALENCE

The data of disease prevalence at the district-level and particularly at the block/ municipality level is poor. The situation has been largely captured through interviews with health officials, health centre visits and interaction with communities in mining-affected areas.

According to Annual Health Survey (2012-2013), Dhanbad has very high prevalence of chronic diseases such as diabetes, hypertension, tuberculosis (TB), respiratory infection, in both urban and rural areas, when compared to even the state average (*See table 26.1: Number of persons suffering from acute illness in Jharkhand state and Dhanbad).* Given the high air pollution in the region resulting from opencast coal mining, the population is particularly vulnerable to respiratory illnesses such as acute respiratory infection (ARI), tuberculosis and asthma. For instance, in Dhanbad the TB prevalence is 288 per one lakh population, which is nearly one and half times the average prevalence level in India which is 195. It is to be noted here, that the India average is itself problematic as the country has been identified as one of the countries with a high TB burden and has a Sustainable Development Goals (SDG) target of eradicating TB by 2030.

Furthermore, people in the mining-affected areas reported that they suffered from various respiratory ailments including tuberculosis and asthma.

Table 26.1: Number of persons suffering from acute illness in Jharkhand state and Dhanbad

Illnesses (per lakh people)	Person in Jharkhand state			Person in Dhanbad district		
	Total	Rural	Urban	Total	Rural	Urban
Acute Respiratory Infection (ARI)	3,320	3,129	3,851	4,098	3,974	4,179
Any kind of chronic illness	7,413	6,536	9,858	12,691	11,273	13,619
Diabetes	802	383	1,970	1,534	923	1,932
Hypertension	839	453	1,916	1,516	918	1,907
Tuberculosis	307	348	192	288	323	265
Asthma/ Chronic Respiratory Disease	415	376	524	658	469	782

Source: Annual Health Survey, 2012-2013

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Table 26.2: Percentage of diarrhoea, dehydration and malaria in children 0-5 years of age to total reported childhood diseases of that age (2016-17)

Block/Municipality name	Diarrhoea and Dehydration (%)	Malaria (%)
Dhanbad sadar	71.9	40.3
Jharia	100	0
Baghmara	0	100
Baliapur	6.7	84.7
Gobindpur	100	0
Nirsa	35.3	0
Topchanchi	40.7	55.1
Tundi	96.3	2.8
Purbi Tundi	48.4	46.3

Source: Ministry of Health and Family Welfare, August 2017

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 Dhanbad 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 done in post monsoon.
3. 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.
4. 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.
5. 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

DR-1,2,3
4&6

झारखण्ड सरकार

अंचल अधिकारी का कार्यालय, झरिया।

दूरभाष संख्या– 25272(झारनेट), ई मेल :– co_jharia@rediffmail.com

पत्रांक–14/

दिनांक–04/01/2023

प्रेषक,

प्रमेश कुशवाहा (झा0प्र0से0)
अंचल अधिकारी,
झरिया।

सेवा में,

जिला खनन पदाधिकारी,
धनबाद।

विषय :– Category-II बालू घाट के संचालन हेतु प्रतिवेदन उपलब्ध कराने के संबंध में।

प्रसंग :– आपका पत्रांक–3384/एम0, धनबाद, दिनांक–29.12.2022

महाशय,

उपर्युक्त विषयक प्रासंगिक पत्र के संदर्भ में कहना है कि झरिया अंचल अंतर्गत Category-II बालू घाट के बावत संलग्न विहित प्रपत्र में संबंधित राजस्व उप निरीक्षक का जाँच प्रतिवेदन अंचल निरीक्षक के माध्यम से प्राप्त है।

अतः प्राप्त प्रतिवेदन विहित प्रपत्र में इस पत्र के साथ संलग्न कर आवश्यक कारवाई हेतु भेजा जाता है।

अनु0–विहित प्रपत्र।

विश्वासभाजन

04/1/2023

(प्रमेश कुशवाहा)
अंचल अधिकारी,
झरिया

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DR 1 मौजा टासरा मौजा नं0–168 ब्लॉक–झरिया, जिला–धनबाद थाना नं0–0165 प्लॉट नं0–786 रकवा–51.60 in (Ha) बालू घाट से संबंधित प्रतिवेदन।

विहित प्रपत्र

क्र0 सं0	निर्धारित बिन्दु	हाँ/नहीं
1	क्या आवेदित भूमि की कोटि सर्वे खतियान यथा रजिस्टर–II में जंगल झाड़ी के रूप में दर्ज है?	नहीं
2	क्या 500 मीटर की दूरी के अंदर कोई मानव (Habitation) बसाहट स्थित है?	हाँ
3	क्या 500 मीटर की दूरी के अंदर कोई जलीय निकाय (Dam/Reservoir) स्थित है?	नहीं
4	क्या 500 मीटर की दूरी के अंदर कोई नदी (River) 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 10 कि0मी0 की परिधि में कोई अंतर्राज्यीय (Interstate) सीमा है?	हाँ
8	क्या 500 मीटर की दूरी के अंदर कोई राष्ट्रीय धरोहर/पुरातत्वीय (Monuments/Archaeological) महत्त्व के स्थल स्थित है?	नहीं

04/1/2023

अंचल अधिकारी,
झरिया
04/1/23

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DR 2 मौजा हेटकाण्ड्रा मौजा नं0–167 ब्लॉक–झरिया, जिला–धनबाद थाना नं0–0165 प्लॉट नं0–785 रकवा–16.34 in (Ha) बालू घाट से संबंधित प्रतिवेदन।

विहित प्रपत्र

क्र0 सं0	निर्धारित बिन्दु	हाँ/नहीं
1	क्या आवेदित भूमि की कोटि सर्वे खतियान यथा रजिस्टर–II में जंगल झाड़ी के रूप में दर्ज है?	नहीं
2	क्या 500 मीटर की दूरी के अंदर कोई मानव (Habitation) बसाहट स्थित है?	हाँ
3	क्या 500 मीटर की दूरी के अंदर कोई जलीय निकाय (Dam/Reservoir) स्थित है?	नहीं
4	क्या 500 मीटर की दूरी के अंदर कोई नदी (River) 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 10 कि0मी0 की परिधि में कोई अंतर्राज्यीय (Interstate) सीमा है?	हाँ
8	क्या 500 मीटर की दूरी के अंदर कोई राष्ट्रीय धरोहर/पुरातत्वीय (Monuments/Archaeological) महत्त्व के स्थल स्थित है?	नहीं

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DR-3

मौजा नं0–168 ब्लॉक–झरिया जिला

DR 3 मौजा चासनाला मौजा नं0–165 का हाल सर्वे खयितान का अवलोकन करने पर पाया कि हाल सर्वे खतियान में प्लॉट नं0–960 दर्ज नही है, इसके बदले प्लॉट नं0–650 रकवा–82.50 ए0 किस्म दामोदर नदी अंकित है।

04/11/2023

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Jharkhand, Ranchi

DR-4

DR 4 मौजा जहाजटांड (भौंरा) मौजा नं0–112, प्लॉट सं0–2752, हाल सर्वे खतियान खाता सं0–186 प्लॉट नं0–2752 रकवा–158.50 ए0, किस्म नदी अनाबाद बिहार सरकार के रूप में दर्ज है। उक्त प्लॉट का बालूघाट के निमित विहित प्रपत्र में जाँच प्रतिवेदन निम्नवत है :–

विहित प्रपत्र

क्र0 सं0	निर्धारित बिन्दु	हाँ/नहीं
1	क्या आवेदित भूमि की कोटि सर्वे खतियान यथा रजिस्टर–II में जंगल झाड़ी के रूप में दर्ज है?	नहीं
2	क्या 500 मीटर की दूरी के अंदर कोई मानव (Habitation) बसाहट स्थित है?	हाँ
3	क्या 500 मीटर की दूरी के अंदर कोई जलीय निकाय (Dam/Reservoir) स्थित है?	हाँ
4	क्या 500 मीटर की दूरी के अंदर कोई नदी (River) स्थित है?	हाँ
5	क्या 500 मीटर की दूरी के अंदर कोई शैक्षणिक संस्थान (Educational Institute) स्थित है?	हाँ
6	क्या 500 मीटर की दूरी के अंदर कोई चिकित्सालय (Hospital) स्थित है?	नहीं
7	क्या 10 कि0मी0 की परिधि में कोई अंतर्राज्यीय (Interstate) सीमा है?	नहीं
8	क्या 500 मीटर की दूरी के अंदर कोई राष्ट्रीय धरोहर/पुरातत्वीय (Monuments/Archaeological) महत्त्व के स्थल स्थित है?	नहीं

04/11/2023

अंचल अधिकारी,
झरिया

State Level Environment Impact Assessment Authority ★ Jharkhand, Ranchi ★
Approved

DR 6 मौजा डुंगरी मौजा नं0–111 हाल खाता नं0–126, हाल प्लॉट नं0–1 रकवा–1.94 एकड़ किस्म दामोदर नदी में बालू घाट स्थित है, जो अनाबाद बिहार सरकार के नाम से हाल सर्वे खयितान में दर्ज है, जिसका वांछित प्रतिवेदन विहित प्रपत्र में निम्नवत है :–

विहित प्रपत्र

क्र0 सं0	निर्धारित बिन्दु	हाँ/नहीं
1	क्या आवेदित भूमि की कोटि सर्वे खतियान यथा रजिस्टर–II में जंगल झाड़ी के रूप में दर्ज है?	नहीं
2	क्या 500 मीटर की दूरी के अंदर कोई मानव (Habitation) बसाहट स्थित है?	हाँ
3	क्या 500 मीटर की दूरी के अंदर कोई जलीय निकाय (Dam/Reservoir) स्थित है?	हाँ
4	क्या 500 मीटर की दूरी के अंदर कोई नदी (River) स्थित है?	हाँ
5	क्या 500 मीटर की दूरी के अंदर कोई शैक्षणिक संस्थान (Educational Institute) स्थित है?	हाँ
6	क्या 500 मीटर की दूरी के अंदर कोई चिकित्सालय (Hospital) स्थित है?	नहीं
7	क्या 10 कि0मी0 की परिधि में कोई अंतर्राज्यीय (Interstate) सीमा है?	नहीं
8	क्या 500 मीटर की दूरी के अंदर कोई राष्ट्रीय धरोहर/पुरातत्वीय (Monuments/Archaeological) महत्त्व के स्थल स्थित है?	नहीं

04/1/2023

अंचल अधिकारी,

State Level Environment Impact Assessment Authority ★ Jharkhand, Ranchi ★ Approved

DR-4, 6

झारखण्ड सरकार

अंचल अधिकारी का कार्यालय, झरिया।

दूरभाष संख्या– 25272(झारनेट), ई मेल :– co_jharia@rediffmail.com

पत्रांक–..255../ दिनांक–..21../..02./2023

प्रेषक,

प्रमेश कुशवाहा (झा0प्र0से0)
अंचल अधिकारी,
झरिया।

सेवा में,

सहायक निदेशक, भूतत्व
जिला भूतात्विक कार्यालय,
बोकारो।

विषय :– Category-II बालू घाट के संचालन हेतु प्रतिवेदन उपलब्ध कराने के संबंध में।

प्रसंग :– आपका पत्रांक–15, दिनांक–03.02.2023 एवं इस कार्यालय के पत्रांक–14 दिनांक–04.01.2023

महाशय,

उपर्युक्त विषयक प्रासंगिक पत्र के संदर्भ में कहना है कि झरिया अंचल अंतर्गत Category-II बालू घाट के बावत संलग्न विहित प्रपत्र में प्रतिवेदन जिला खनन पदाधिकारी, धनबाद को उपलब्ध कराया गया है। जिसमें DR 6 मौजा डुगंरी मौजा नं0–111 एवं DR 4 मौजा जहाजटांड (भौंरा) मौजा नं0–112 के कंडिका–03 में 500 मीटर के दूरी के अंदर कोई जलीय निकाय (Dam/Reservoir) स्थित नही है। जिसका आंशिक संशोधन विहित प्रपत्र में करते हुए इस पत्र के साथ संलग्न कर आवश्यक कारवाई हेतु भेजा जाता है।

अनु0–विहित प्रपत्र।

विश्वासभाजन

21/2/2023

(प्रमेश कुशवाहा)
अंचल अधिकारी,
झरिया।

State Level Environment Impact Assessment Authority ★ Jharkhand, Ranchi ★
Approved

Scanned with CamScanner

DR-6

DR 6 मौजा डुंगरी मौजा नं0–111 हाल खाता नं0–126, हाल प्लॉट नं0–1 रकवा–1.94 एकड़ किस्म दामोदर नदी में बालू घाट स्थित है, जो अनाबाद बिहार सरकार के नाम से हाल सर्वे खयितान में दर्ज है, जिसका वांछित प्रतिवेदन विहित प्रपत्र में निम्नवत है :–

विहित प्रपत्र

क्र0 सं0	निर्धारित बिन्दु	हाँ/नहीं
1	क्या आवेदित भूमि की कोटि सर्वे खतियान यथा रजिस्टर–II में जंगल झाड़ी के रूप में दर्ज है?	नहीं
2	क्या 500 मीटर की दूरी के अंदर कोई मानव (Habitation) बसाहट स्थित है?	हाँ
3	क्या 500 मीटर की दूरी के अंदर कोई जलीय निकाय (Dam/Reservoir) स्थित है?	नहीं
4	क्या 500 मीटर की दूरी के अंदर कोई नदी (River) स्थित है?	हाँ
5	क्या 500 मीटर की दूरी के अंदर कोई शैक्षणिक संस्थान (Educational Institute) स्थित है?	हाँ
6	क्या 500 मीटर की दूरी के अंदर कोई चिकित्सालय (Hospital) स्थित है?	नहीं
7	क्या 10 कि0मी0 की परिधि में कोई अंतर्राज्यीय (Interstate) सीमा है?	नहीं
8	क्या 500 मीटर की दूरी के अंदर कोई राष्ट्रीय धरोहर/पुरातत्वीय (Monuments/Archaeological) महत्त्व के स्थल स्थित है?	नहीं

प्रभारी अंचल निरीक्षक

21/12/2023

अंचल अधिकारी,
झरिया।

State Level Environment Impact Assessment Authority
Approved
Jharkhand, Ranchi

Scanned with CamScanner

DUNGRI & PUTTIA DR-06

8776.

28/7/86

6

MINING LEASE FOR MAJOR MINERALS

THIS INDENTURE made this 30th day of June 1986, between the GOVERNOR OF BIHAR (hereinafter referred to as the STATE GOVERNMENT which expression shall where the context so admits be deemed to include the successors and assigns) of the ONE PART.

A N D

THE TATA IRON & STEEL COMPANY LIMITED, having its Registered Office at 24, Homi Mody Street, Fort, Bombay-1 (hereinafter to as the "LESSEES" which expression shall where the context so admits be deemed to include its successors and permitted assigns) of the OTHER PART.

For & on behalf of
Iron & Steel Company Limited

cont...2

State Level Environment Impact Assessment Authority
Approved
Jharkhand, Ranchi

WHEREAS the Lessee have applied to the State Government in accordance with the Mineral Concession Rules, 1960 hereinafter referred to as the said rules for a Mining Lease for Sand (stowing purposes) only in respect of the lands described in Part I of the Schedule hereunder written has deposited with the State Government the sum of Rs. 1000/- (Rupees one thousand) only as Security Money vide Challan No. T27 dated 1.3.86 and the sum of Rs. 500/-(Rupees five hundred) only for meeting the preliminary expenses Vide Challan No. 100C dated 6.1.81 for mining lease.

WITNESSESTH that in consideration of the rents and Royalties covenants and agreements by and in these present and the schedule hereunder written reserved and

cont..3

State Level Environment Impact Assessment Authority * Jharkhand, Ranchi * Approved

PART-I

THE AREA OF THIS LEASE

Location and area of the Lease

All that tract of lands situated at Villages Dungri, Mouza No. 111, Plot No. 1 and Puttia Mouza No. 107, Plot No. 2714 of Registration office Dhanbad, sub District Dhanbad, District Dhanbad containing a total area of 59.62 acres or there abouts delineated on the plan hereto annexed and thereon coloured in Red bordered and bounded as follows:-

East / North: Plot No. 4, 164 and 170 of Dungri Mouza.
Plot No. 2616 of Puttia.

West / South: Silphor Mouza.

East: Part of Plot No. 1, Damodar River.

South / West: Part or Plot No. 2714 Damidar River

hereinafter referred to as "The said lands".

PART -II

LIABILITIES, POWERS AND PRIVILEGES TO BE EXERCISED AND ENJOYED BY THE LESSEE/LESSES SUBJECT TO THE RESTRICTIONS AND CONDITIONS IN PART III

To enter upon land and search for win work etc.

1. Liberty and power at all times during the term hereby demised to enter upon the said lands and to search for mine bore, dig, drill for win work dress process, convert, carry away and dispose of the said Mineral/Minerals.

cont...

State Level Environment Impact Assessment Authority * Jharkhand, Ranchi * Approved

To sink drive and machinery equipment etc.

2. Liberty and power for in connection with any of the purposes mentioned in this part to sink, drive, make maintain and use in the said lands and pits, shafts, inclines, drifts, levels, water ways, airways and other works (and to use maintain, deepen or extend any existing works of the like nature in the said lands).

To bring and use machinery equipment etc.

3. Liberty and power for or in connection with any of the purposes mentioned in this part to erect, construct maintain and use on or under the said lands, any engines, machinery, plants, dressing floors, furnaces Coke ovens, brick klins, workshops, store,houses,bungalows, godowns, sheds and other buildings and other works and conveniences of the like nature on or under the said lands.

Of Mining Officer
DHANBAD

To make roads and ways etc. and use existing roads and ways.

4. Liberty and power for on or in connection with any of purposes landing mentioned in this part to make tramways, railways, roadways, roads, aircrafts grounds and other ways in or over the said lands and to use, maintain and go and repass with or without horses,cattle wagons, Aircrafts, locomotives or other vehicles over the same(or any existing tramways, railways roads and other ways in or over the said lands) on such conditions as may

State Level Environment Impact Assessment Authority
Approved
Jharkhand, Ranchi

IN WITNESSESS WHEREOF these presents have been executed in the manner hereunder appearing the day and year above written.

Duplicate is the exact copy of the original.

Signed by:

For and on behalf of the Governor of the State of Bihar.

Deputy Commissioner
DHANBAD

In the presence of signed by for and on behalf of TISCO.

District Mining Officer
DHANBAD [illegible]

In presence of

Witnesses:

1. Umesh Nath Chatra

2. P.S. Ramasesha

3.

For & on behalf of
The Tata Iron & Steel Co[illegible]
By, Their Constituted [illegible]

Dy. Divisional Manager (I)

Tech. Asst. to ~~DOC (Jh)~~

Typed by:

State Level Environment Impact Assessment Authority
Approved
Jharkhand, Ranchi

रजि. सं. डी.एल.-33004/99

भारत का राजपत्र
The Gazette of India

सी.जी.-डी.एल.-अ.-29072021-228570
CG-DL-E-29072021-228570

असाधारण
EXTRAORDINARY

भाग II—खण्ड 3—उप-खण्ड (ii)
PART II—Section 3—Sub-section (ii)

प्राधिकार से प्रकाशित
PUBLISHED BY AUTHORITY

सं. 2804] नई दिल्ली, बृहस्पतिवार, जुलाई 29, 2021/श्रावण 7, 1943
No. 2804] NEW DELHI, THURSDAY, JULY 29, 2021/SHRAVANA 7, 1943

कोयला मंत्रालय

अधिसूचना

नई दिल्ली, 28 जुलाई, 2021

का.आ. 3026(अ).— केंद्रीय सरकार, खान एवं खनिज (विकास एवं विनियमन) अधिनियम, 1957 (1957 का 67) की धारा 17क की उपधारा (1 क) के खंड(क) द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए, धारा 17क(1क) के अधीन निहित शक्तियों के अनुसार निम्नलिखित क्षेत्रों को, भारतीय इस्पात प्राधिकरण (सेल) के लिए इसकी भूमिगत खानों में खुदाई करने के लिए रेत हेतु रेत पट्टा सीमा निर्देशांक के साथ आरक्षित करने का विनिश्चय करती है:-

क्र. सं.	तालुक	मौजा सं.	भूखंड सं.	क्षेत्र (हे.)
1	चासनाला	165	960	30.63
2	हेत कंदरा	167	785	16.34
3	तसरा	168	786	51.60
4	डुंगरीघाट	111	01	36.06

DR-6

उपरोक्त क्षेत्रों के निर्देशांक निम्नानुसार हैं:

चासनाला, हेतकंदरा और तसरा की भू-संदर्भित भूसंपत्ति खाका से पता लगाए गए चासनाला, हेतकंदरा और तसरा के पट्टा सीमा निर्देशांक

क्र. सं.	अक्षांश	देशांतर
1.	23°39' 7.864" उ	86° 26' 37.754" पू
2.	23°39' 3.115" उ	86° 26' 49.279" पू

Approved
State Level Environment Impact Assessment Authority
Jharkhand, Ranchi

झारखण्ड सरकार
उद्योग, खान एवं भूतत्व विभाग

पत्रांक - ख0 नि0 (धनबाद) 08 / 2014 1169 /एम0,सचि दिनांक- 25/05/14

प्रेषक,

रोबिन टोप्पो
संयुक्त सचिव।

सेवा में

सचिव,
कोयला मंत्रालय,
भारत सरकार, नई दिल्ली।

विषय:- धनबाद जिलान्तर्गत डुंगरी घाट, हटकेन्दरा घाट, चासनाला घाट और तसरा घाट अवस्थित बालूघाटों को भूमिगत कोयला खदानों के लिए क्षेप्याभरण बालू (Sand for Stowing) के आरक्षण के संबंध में।

प्रसंग: खान निदेशालय के पत्रांक--486, दिनांक--23.02.2016

महाशय,

उपर्युक्त विषयक प्रासंगिक पत्र के संबंध में निदेशानुसार कहना है कि भारत सरकार के सरकारी उपक्रम स्टील ऑथोरिटी ऑफ इंडिया लि0 कोलियरी डिवीजन, चासनाला के महाप्रबंधक के पत्रांक--239 दिनांक--18.02.2017 द्वारा धनबाद जिलान्तर्गत चासनाला एवं जितपुर भूमिगत कोलियरी से कोयला उत्पादन के फलस्वरूप रिक्त हुए स्थल को बालू द्वारा भरे जाने की आवश्यकता का उल्लेख करते हुए उक्त बालूघाटों को आरक्षण हेतु अनुरोध किया गया हैं।

सहायक खनन पदाधिकारी, धनबाद के पत्रांक--83 / एम0, दिनांक--20.01.2016 द्वारा सर्वश्री सेल कोलियरी डीवीजन, चासनाला के अभ्यावेदन पर खान एवं खनिज (विकास एवं विनियमन) अधिनियम, 1957 की धारा --17A(2A) एवं 17A (2C) के तहत आवश्यक विचार करने का अनुरोध किया गया हैं।

अतः भूमिगत कोयला खान की सुरक्षा की दृष्टिकोण से खान एवं खनिज (विकास एवं विनियमन) अधिनियम, 1957 की धारा --17A(2A) एवं 17A (2C) के तहत निम्नांकित क्षेत्र (मानचित्र संलग्न) में क्षेप्याभरण बालू (Sand for Stowing) के पट्टा की स्वीकृति हेतु सर्वश्री स्टील ऑथोरिटी ऑफ इण्डिया लि0 (SAIL) के पक्ष मे आरक्षित करने की कृपा की जाए।

आरक्षित की जाने वाले बालूघाटों के क्षेत्र का विवरणी --

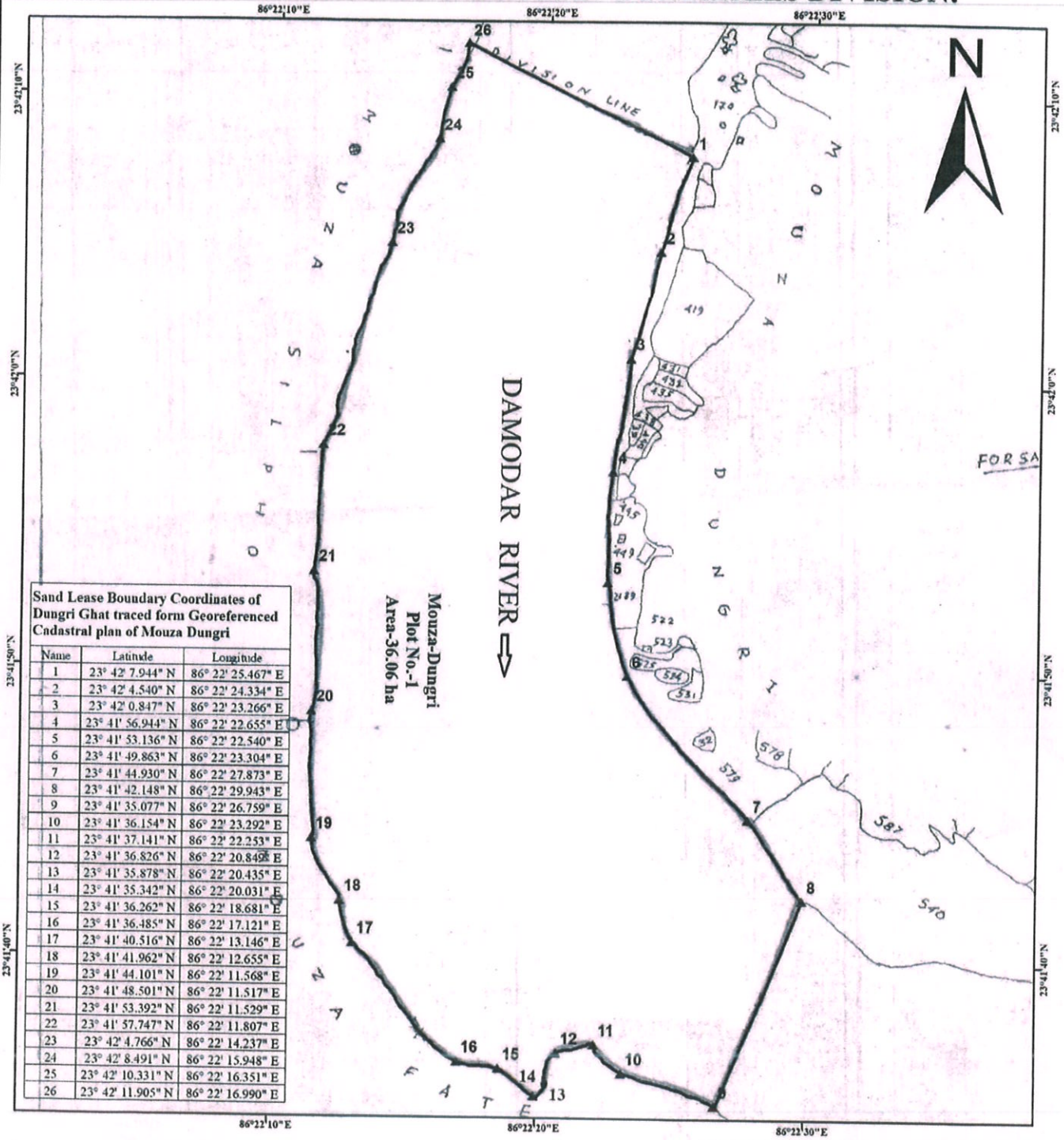
Taluq	Mouza No	Plot No.	Area (Ha)
Chasnalla	165	960	30.63
Het Kandra	167	785	16.34
Tasra	168	786	51.60
Dungri	111	01	36.06

अनु0-- यथोक्त

विश्वासभाजन,
12/5/17
सरकार के संयुक्त सचिव।

Approved
Jharkhand, Ranchi

GEOREFERENCED CADASTRAL PLAN OF DUNGRI GHAT SAND LEASE CIRCLE JHARIA, DIST-DHANBAD (JHARKHAND) STEEL AUTHORITY OF INDIA LTD.-COLLIERIES DIVISION.



Sand Lease Boundary Coordinates of Dungri Ghat traced form Georeferenced Cadastral plan of Mouza Dungri

Name	Latitude	Longitude
1	23° 42' 7.944" N	86° 22' 25.467" E
2	23° 42' 4.540" N	86° 22' 24.334" E
3	23° 42' 0.847" N	86° 22' 23.266" E
4	23° 41' 56.944" N	86° 22' 22.655" E
5	23° 41' 53.136" N	86° 22' 22.540" E
6	23° 41' 49.863" N	86° 22' 23.304" E
7	23° 41' 44.930" N	86° 22' 27.873" E
8	23° 41' 42.148" N	86° 22' 29.943" E
9	23° 41' 35.077" N	86° 22' 26.759" E
10	23° 41' 36.154" N	86° 22' 23.292" E
11	23° 41' 37.141" N	86° 22' 22.253" E
12	23° 41' 36.826" N	86° 22' 20.849" E
13	23° 41' 35.878" N	86° 22' 20.435" E
14	23° 41' 35.342" N	86° 22' 20.031" E
15	23° 41' 36.262" N	86° 22' 18.681" E
16	23° 41' 36.485" N	86° 22' 17.121" E
17	23° 41' 40.516" N	86° 22' 13.146" E
18	23° 41' 41.962" N	86° 22' 12.655" E
19	23° 41' 44.101" N	86° 22' 11.568" E
20	23° 41' 48.501" N	86° 22' 11.517" E
21	23° 41' 53.392" N	86° 22' 11.529" E
22	23° 41' 57.747" N	86° 22' 11.807" E
23	23° 42' 4.766" N	86° 22' 14.237" E
24	23° 42' 8.491" N	86° 22' 15.948" E
25	23° 42' 10.331" N	86° 22' 16.351" E
26	23° 42' 11.905" N	86° 22' 16.990" E

Legend

Dungri Ghat Sand Lease Area (36.06Ha)

1:3,960

0 25 50 100 150 200 Meters

Note: Sand Lease Boundary have been digitized from Cadastral Plan suppled by STEEL AUTHORITY OF INDIA Ltd.

GEOREFERENCED CADASTRAL PLAN OF DUNGRI GHAT SAND LEASE
CIRCLE JHARIA,DIST.-DHANBAD (JHARKHAND)
STEEL AUTHORITY OF INDIA LTD.-COLLIERIES DIVISION.

MINE SURVEYING SECTION
DEPARTMENT OF MINING ENGINEERING
IIT (ISM) DHANBAD - 826004

PLAN NO.:IIT(ISM)/SAIL/DUNGRI GHAT SAND LEASE/17-18/01

State Level Environment Impact Assessment Authority, Jharkhand, Ranchi
Approved

DR-5

झारखण्ड सरकार

अंचल अधिकारी का कार्यालय, पुटकी (धनबाद)

दूरभाष सं0–8434398418, E-mail : coputki123@gmail.com

पत्रांक–53, दिनांक–02.02.2023

प्रेषक,

शुभ्रा रानी (झा0प्र0से0)
अंचल अधिकारी, पुटकी।

सेवा में,

जिला खनन पदाधिकारी,
धनबाद।

विषयः– Category – II बालू घाट के संचालन हेतु जाँच प्रतिवेदन का प्रेषण।

प्रसंगः– भवदीय पत्रांक–3384 / एम0, दिनांक–29.12.2022

महाशय,

उपर्युक्त विषयक प्रासंगिक पत्र के संबंध में कहना है कि Category – II बालू घाट के संचालन हेतु भूमि संबंधी जाँच संबंधित राजस्व उप निरीक्षक एवं प्रभारी अंचल निरीक्षक से कराई गई। जाँचोपरांत प्रतिवेदित किया गया है कि मौजा–पेटिया, मौजा सं0–107, हाल सर्वे खाता सं0–167, हाल सर्वे प्लॉट सं0–2235, जो ऑनलाईन खतियान में रैयत शंकर महतो के नाम से दर्ज है एवं हाल सर्वे खाता सं0–22, हाल सर्वे प्लॉट सं0–74, जो ऑनलाईन खतियान एवं पंजी–2 में रैयत गणेश महतो के नाम से दर्ज है।

अतः जाँच प्रतिवेदन के आधार पर विहित प्रपत्र में प्रतिवेदन तैयार कर इस पत्र के साथ संलग्न कर आवश्यक कार्रवाई हेतु भेजा जा रहा है।

अनुलग्नकः– यथा–उपर्युक्त।

विश्वासभाजन

2/2/23

(शुभ्रा रानी)
अंचल अधिकारी, पुटकी।

State Level Environment Impact Assessment Authority
Approved
Jharkhand, Ranchi

क्र0 सं0	निर्धारित बिन्दु	हाँ/नहीं
1	2	3
1	क्या आवेदित भूमि की कोटि सर्वे खतियान यथा रजिस्टर–II में जंगल–झाड़ी के रूप में दर्ज है ?	नहीं
2	क्या 500 मीटर की दूरी के अंदर कोई मानव बसाहट (Habitation) स्थित है ?	नहीं
3	क्या 500 मीटर की दूरी के अंदर कोई जलीय निकाय (Dam/Reservoir) स्थित है ?	नहीं
4	क्या 500 मीटर की दूरी के अंदर कोई नदी (River) 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 10 कि0मी0 की परिधि में कोई अंतर्राज्यीय (Interstate) सीमा स्थित है ?	नहीं
8	क्या 500 मीटर की दूरी के अंदर कोई राष्ट्रीय धरोहर/पुरातत्वीय (Monuments/Archaeological) महत्व के स्थल स्थित है ?	नहीं

(शुभा [illegible])
अंचल अधिकारी, पुटकी।

State Level Environment Impact Assessment Authority
Approved
Jharkhand, Ranchi

DR-7 ④ 86

CO CERTIFICATE

Project Name : DUNGRI - PATIA SAND LEASE

Proponent Name : TATA STEEL

Date : 29.05.20 Lease Area : 59.62 एकड़

Plot No. : 01 Khata No. : 126

Anchal : JHARIA District : DHANBAD

क्रम सं0	निर्धारित बिन्दु	हाँ / नहीं
1.	क्या आवेदित भूमि की कोटि सर्वे खतियान यथा रजिस्टर-II में जंगल झाड़ी के रुप में दर्ज है?	नहीं
2.	क्या 500 मीटर की दूरी के अंदर कोई मानव बसाहट (Habitation) स्थित है?	नहीं
3.	क्या 500 मीटर की दूरी के अंदर कोई जलीय निकाय (Dam/Reservoir) स्थित है?	नहीं
4.	क्या 500 मीटर की दूरी के अंदर कोई नदी (River) स्थित है?	स्वयं दामोदर नदी
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 10 कि०मी० की परिधि में कोई अंतर्राज्यीय (Interstate) सीमा है?	नहीं
8.	क्या 500 मीटर की दूरी के अंदर कोई राष्ट्रीय धरोहर/ पुरातत्वीय (Monuments/Archaeological) महत्व के स्थल स्थित है?	नहीं

The information required in serial no.-1 of above format are mandatory for each type of proposal to process the application for Environmental Clearance.

Note : N/A

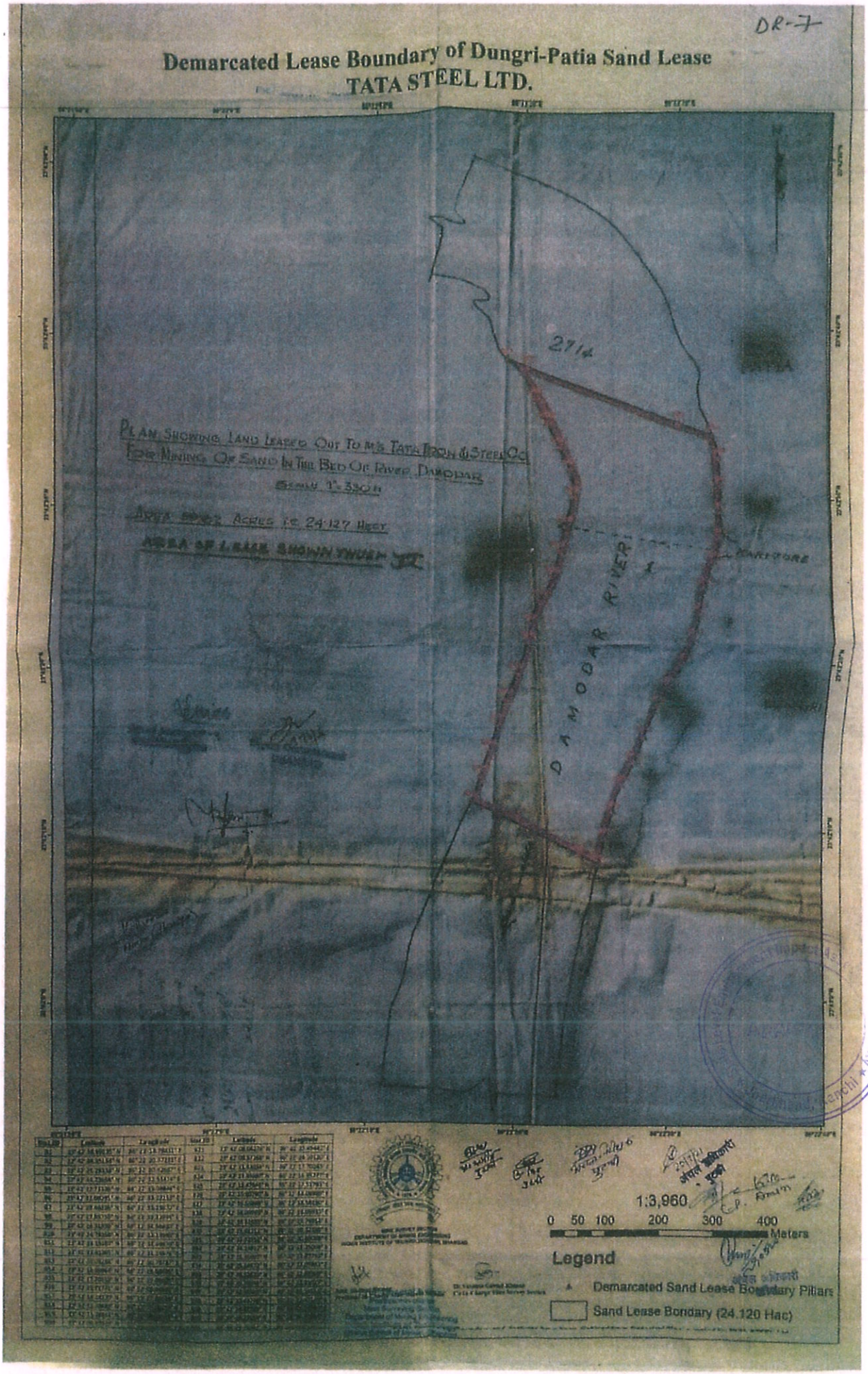
Circle officer
अंचल अधिकारी

अंचल अधिकारी
झरिया।

State Level Environment Impact Assessment Authority
Approved
Jharkhand Ranchi

DR-7

Demarcated Lease Boundary of Dungri-Patia Sand Lease
TATA STEEL LTD.



Scanned with CamScanner

DR-08

अंचल अधिकारी का कार्यालय,पुटकी(धनबाद) ।

पत्रांक....246.....

प्रेषक,

अंचल अधिकारी,
पुटकी(धनबाद)।

सेवा में,

टाटा स्टील लिमिटेड
(झरिया,जामाडबा ऑफिस)

पुटकी,दिनांक 26.07.2021

विषयः— मौजा पेटिया प्लॉट संख्या—पूराना 2616/2714 नया प्लॉट सं0—1755 खाता सं0—201 रकवा—37.50 एकड क्षेत्र पर मेसर्स टाटा स्टील लिमिटेड द्वारा बालु (क्षेप्याभरण) के लिए धारित खनन पट्टा के नवीकरण की स्वीकृति हेतु दाखिल आवेदन पत्र दिनांक 02/07/2021 का प्रमाण पत्र का प्रेषण ।

प्रेषणः— आपका पत्रांक 19/2021 दिनांक 02/07/2021 ।

महाशय,

उपर्युक्त विषयक प्रासंगिक पत्र के आलोक में मौजा पेटिया मौजा नं0—2616/2714 खाता सं0—201 रकवा 37.50 एकड जो गैरअवाद खाते की है,। मेसर्स टाटा स्टील लि0 द्वारा बालु (क्षेप्याभरण) के लिए निर्गत प्रमाण पत्र मूल में आवश्यक कार्रवई हेतु भेजा जा रहा है ।

अनुलग्नकः— मूल प्रमाण पत्र ।

विश्वासभाजन,

अंचल अधिकारी,
पुटकी ।

Approved
State Level Environment Impact Assessment Authority
Jharkhand, Ranchi

Scanned with CamScanner

DR-08 (6)

CO CERTIFICATE

Project Name : DUNGRI - PETIA SAND LEASE

Proponent Name : TATA STEEL

Date : 20.07.2021 Lease Area : 37.50

Plot No. : OLD - 2616 2714 NEW 1755 Khata No. : 201

Anchal : PUTKI District : DHANBAD

क्रम सं०	निर्धारित बिन्दु	हाँ/नहीं
1.	क्या आवेदित भूमि की कोटि सर्वे खतियान यथा रजिस्टर–II में जंगल झाड़ी के रूप में दर्ज है?	नहीं
2.	क्या 500 मीटर की दूरी के अंदर कोई मानव बसाहट (Habitation) स्थित है?	नहीं
3.	क्या 500 मीटर की दूरी के अंदर कोई जलीय निकाय (Dam/Reservoir) स्थित है?	नहीं
4.	क्या 500 मीटर की दूरी के अंदर कोई नदी (River) स्थित है?	स्वर्ण नदी
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 10 कि०मी० की परिधि में कोई अंतर्राज्यीय (Interstate) सीमा है?	नहीं
8.	क्या 500 मीटर की दूरी के अंदर कोई राष्ट्रीय धरोहर/पुरातत्वीय (Monuments/Archaeological) महत्व के स्थल स्थित है?	नहीं

The information required in serial no.-1 of above format are mandatory for each type of proposal to process the application for Environmental Clearance.

Note : N/A

20/7/21

Circle Officer

अंचल अधिकारी
पुटकी

Scanned with CamScanner

DR- 08

झारखण्ड सरकार

अंचल अधिकारी का कार्यालय, पुटकी (धनबाद)।

दूरभाष सं०:–8434398418 ई०मेल:–coputki123@gmail.com

पत्रांक....20..... दिनांक...23.02.2023

प्रेषक,

शुभा रानी (झा०प्र०से०),
अंचल अधिकारी, पुटकी।

सेवा में,

सहायक निदेशक (भूतत्व),
जिला भूतात्विक कार्यालय, बोकारो।

विषयः– Category – II बालू घाट के संचालन हेतु प्रतिवेदन का प्रेषण।

प्रसंगः– आपका पत्रांक–स०नि०भू० : 14/2022–23/45, दिनांक–21.02.2023

महाशय,

उपर्युक्त विषयक प्रासंगिक पत्र के संबंध में कहना है कि Category – II बालू घाट के संचालन हेतु संबंधित राजस्व उप निरीक्षक एवं प्रभारी अंचल निरीक्षक से जाँच कराई गई। जाँचोपरांत प्रतिवेदित किया गया है कि मौजा–पेटिया, मौजा सं०–107, हाल सर्वे खाता सं०–201, हाल सर्वे प्लॉट सं०–1755, रकवा–37.50 एकड़ भूमि ऑनलाइर्न खतियान एवं पंजी–2 में अनाबाद बिहार सरकार के नाम से दर्ज है।

अतः जाँच प्रतिवेदन के आधार पर विहित् प्रपत्र में प्रतिवेदन तैयार कर इस पत्र के साथ संलग्न कर आवश्यक कार्रवाई हेतु भेजी जा रही है।

सूचनार्थ समर्पित।

अनुलग्नकः– यथा–उपर्युक्त।

विश्वासभाजन,

23/2/23

(शुभा रानी)
अंचल अधिकारी, पुटकी।

State Level Environment Impact Assessment Authority
Approved
Jharkhand, Ranchi

विहित प्रपत्र

क्र0	निर्धारित बिन्दु	हाँ / नहीं
1	क्या आवेदित भूमि की कोटि सर्वे खतियान यथा रजिस्ट–2 में जंगल–झाड़ी के रूप में दर्ज है?	नहीं
2	क्या 500 मीटर की दूरी के अंदर कोई मानव बसाहट (Habitation) स्थित है?	नहीं
3	क्या 500 मीटर की दूरी के अंदर कोई जलीय निकाय (Dam/Reservoir) स्थित है?	नहीं
4	क्या 500 मीटर की दूरी के अंदर कोई नदी स्थित है?	नहीं
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 10 किलो मीटर की परिधि में कोई अंतर्राष्ट्रीय (Interstate) सीमा है?	नहीं
8	क्या 500 मीटर की दूरी के अंदर कोई राष्ट्रीय धरोहर / पुरातत्वीय (Moaumicnis/Archacological) महत्व के स्थल स्थित है?	नहीं

22.2.23
राजस्व उपनिरीक्षक,
बाघमारा

महाशय,
अंचल निरीक्षक,
बाघमारा 02/03/23

22.2.23
अंचल अधिकारी
बाघमारा

State Level Environment Impact Assessment Authority
Approved
Jharkhand, Ranchi

अंचल अधिकारी का कार्यालय, बाघमारा (धनबाद)

Email : co.baghmara@gmail.com सम्पर्क नं0–.....

पत्रांक ...246....

संशोधित

प्रेषक,

कमल किशोर सिंह, (झा0प्र0से0)
अंचल अधिकारी,
बाघमारा

सेवा में,

जिला खनन पदाधिकारी,
धनबाद

बाघमारा, दिनांक 2.2.23

विषय :– Category – II बालू घाट के संचालन हेतु प्रतिवेदन उपलब्ध कराने के संबंध में
प्रसंग :– सहायक निदेशक (भूतत्व), जिला भूतात्विक कार्यालय, बोकारो का पत्रांक 24 दिनांक 03.02.2023

महाशय,

उपर्युक्त विषयक प्रासंगिक पत्र के संबंध में कहना है कि बाघमारा अंचल अंतर्गत UIN Sl No. DR-10, DR-11, DR-12, DR-13, Category–II बालू घाट के संचालन हेतु पूर्व में इस कार्यालय पत्रांक 01 दिनांक 02.01.2023 द्वारा भेजी गई थी, जिसका आंशिक शंसोधन करते हुए विहित प्रपत्र में प्रतिवेदन की मॉग की गई हैं, उक्त के आलोक में संबंधित राजस्व उपनिरीक्षक, अंचल अमीन एवं अंचल निरीक्षक से मौजा–सिंगड़ा, मौजा सं0–347 की जॉच कराई गई, जॉच प्रतिवेदन विहित प्रपत्र में तैयार की गई हैं, जिसकी मूल प्रति इस पत्र के साथ संलग्न कर आवश्यक कार्रवाई हेतु भेजा जाता हैं।

विश्वासभाजन

अनु0 :– यथोक्त।

2.2.23

(कमल किशोर सिंह)
अंचल अधिकारी,
बाघमारा

State Level Environment Impact Assessment Authority * Jharkhand, Ranchi *
Approved

क्र0 सं0	निर्धारित बिन्दु	हाँ/नहीं
1	2	3
1	क्या आवेदित भूमि की कोटि सर्वे खतियान यथा रजिस्टर–II में जंगल–झाड़ी के रूप में दर्ज है ?	नहीं
2	क्या 500 मीटर की दूरी के अंदर कोई मानव बसाहट (Habitation) स्थित है ?	नहीं
3	क्या 500 मीटर की दूरी के अंदर कोई जलीय निकाय (Dam/Reservoir) स्थित है ?	नहीं
4	क्या 500 मीटर की दूरी के अंदर कोई नदी (River) 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 10 कि0मी0 की परिधि में कोई अंतर्राज्यीय (Interstate) सीमा स्थित है ?	नहीं
8	क्या 500 मीटर की दूरी के अंदर कोई राष्ट्रीय धरोहर/पुरातत्वीय (Monuments/Archaeological) महत्व के स्थल स्थित है ?	नहीं

(शुभ्रा रानी)
अंचल अधिकारी पुटकी।

State Level Environment Impact Assessment Authority
Approved
Jharkhand, Ranchi

DR-9 (6) (9)

अंचल अधिकारी का कार्यालय,पुटकी(धनबाद)

पत्रांक....212...../

प्रेषक,

अंचल अधिकारी,
पुटकी (धनबाद) ।

सेवा में,

जिला खनन पदाधिकारी
धनबाद ।

पुटकी, दिनांक– 29/5/2020

विषय :– धनबाद जिला मौजा–टेटंगाबाद, प्लॉट संख्या– 253(अंश), रकवा– 85.65 एकड क्षेत्र पर मेसर्स टाटा स्टील लि0 द्वारा बालु (क्षेप्याभरण) के लिए धारित खनन पट्टा के नवीकरण की स्वीकृति हेतु दाखिल आवेदन पत्र दिनांक 20.06.2005 के संबंध में जॉच प्रतिवेदन ।

प्रसंग :– जिला खनन कार्यालय धनबाद के पत्रांक 701/एम0 धनबाद दिनांक 02.05.2020 ।

महाशय,

उपर्युक्त विषयक प्रासंगिक पत्र के आलोक में धनबाद जिलान्तर्गत मौजा टेटंगाबाद मौजा सं0–90 के खाता सं0– 15 प्लॉट सं0– 253 (अंश) रकवा–85.65 एकड क्षेत्र जो गैरआवाद खाते की है, उसपर मेसर्स टाटा स्टील लि0 द्वारा बालु (क्षेप्याभरण) के लिए धारित खनन पट्टा के नवीकरण/अवधि विस्तार हेतु दाखिल से संबंधित जॉच राजस्व कर्मचारी से कराया गया जो निम्नवत् है :–

1	क्या आवेदित भूमि की कोटि सर्वे खतियान यथा रजिस्टर–2 में जंगल झाडी के रूप में दर्ज है ?	नही/किन्तु नदी के रूप में दर्ज है ।
2	क्या 500 मीटर की दूरी के अंदर मानव बसाहट (Habitation) स्थित है ?	नही
3	क्या 500 मीटर की दूरी के अंदर कोई जलीय निकाय(Dam/Reservoir) स्थित है ?	नही
4	क्या 500 मीटर की दूरी के अंदर कोई (River) है ?	नही
5	क्या 500 मीटर की दूरी के अंदर कोई शैक्षणिक संस्थान (Educatinal Institute) स्थित है ?	नही
6	क्या 500 मीटर की दूरी के अंदर कोई चिकित्सालय (Hospital) स्थित है ?	नही
7	क्या 10 कि0मी0 की परिधि में कोई अन्तर्राज्यीय(Inter State) स्थित सीमा है ?	नही
8	क्या 500 मीटर की दूरी के अंदर कोई राष्टीय धरोहर/पुरातत्कीय(Monuments/ Archaeological) महत्व के स्थल स्थित है ?	नही

सूचनार्थ प्रेषित ।

State Level Environment Impact Assessment Authority ★ Jharkhand, Ranchi ★ Approved

विश्वासभाजन,

29.05.2020.

अंचल अधिकारी,
पुटकी (धनबाद) ।

अंचल अधिकारी
पुटकी (धनबाद)

5000Rs.

MINING LEASE FOR MAJOR MINERALS

THIS INDENTURE made this 29th day of J... 1986, between the Governor of Bihar (hereinafter referred to as the State Government which expression shall where the context so admits be deemed to include the successors and assigns) of the ONE PART:

A N D

THE TATA IRON & STEEL CO.LIMITED, having its Registered Office at 24, Homi Mody Street, Fort, Bombay-1 (hereinafter to as the "LESSEES" which expression shall where the context so admits be deemed to include its successors and permitted assigns) of the OTHER PART:

For & on behalf of
The Tata Iron & Steel Company Limited
By. Their Constituted Attorney

Approved
State Level Environment Impact Assessment Authority
State of Jharkhand, Ranchi

PART-I

THE AREA OF THIS LEASE

Location and area of the Lease

All that tract of lands situated at Village Tatangabad Mouza No.90, Plot No.253 of Registration office, District Dhanbad, sub-District Dhanbad, District Dhanbad containing a total area of 85.65 acres or there abouts delineated on the plan hereto annexed and thereon coloured in Red butted and bounded as follows:-

North: Plot No.252 and ~~215~~ of Mouza Tetangabad

South: Mouza Machatand, Diborda Mouza Pabratand

East: Damodar River. Plot no 253 P

West: Damodar River Village Brawandeha

Hereinafter referred to as "the said lands"

DHANBAD

For & on behalf of
The Tata Iron & Steel Company Limited
By. Their Constituted Attorney

...8

State Level Environment Impact Assessment Authority * Jharkhand, Ranchi * Approved

9. For the purpose of Stamp duty the anticipation royalty for the demised land is Rs.60,000/-(Rupees sixty thousand) only per year.

IN WITNESSESS WHEREOF these presents have been executed in the manner hereunder appearing the day and year first above written. Duplicate is the true & exact copy of the original.

Signed by:

For and on behalf of the Governor of the State of Bihar.

Deputy Commissioner
DHANBAD

Mining Officer
DHANBAD

In the presence of

Signed by for and on behalf of TISCO.

For & on behalf of
The Tata Iron & Steel Company Limited
By. Their Constituted Attorney

In the presence of

Witnessess:

1. Umesh Nath Chatrig

Dy. Divisional Manager

2. P.S. Ramadesha

Tech. Asst. to DO. (Jh)

Typed by

State Level Environment Impact Assessment Authority
Approved
Jharkhand, Ranchi

DR-10, 11, 12, 13

अंचल अधिकारी का कार्यालय, बाघमारा (धनबाद)

Email : co.baghmara@gmail.com सम्पर्क नं0–.....

पत्रांक .....01.....

प्रेषक,

कमल किशोर सिंह, (झा0प्र0से0)
अंचल अधिकारी,
बाघमारा

सेवा में,

जिला खनन पदाधिकारी,
धनबाद

बाघमारा, दिनांक 02/01/23

विषय :– Category – II बालू घाट के संचालन हेतु प्रतिवेदन उपलब्ध कराने के संबंधम में
प्रसंग :– आपका पत्रांक 3884 / एम0 दिनांक 29.12.2022

महाशय,

उपर्युक्त विषयक प्रासंगिक पत्र के संबंध में कहना है कि बाघमारा अंचल अंतर्गत UIN Sl No. DR-10, DR-11, DR-12, DR-13, Category–II बालू घाट के संचालन हेतु विहित प्रपत्र में प्रतिवेदन की मॉग की गई हैं, उक्त के आलोक में संबंधित राजस्व उपनिरीक्षक, अंचल अमीन एवं अंचल निरीक्षक से मौजा–सिंगड़ा, मौजा सं0–347, मौजा–नागदा, मौजा सं0–327, मौजा–तेलमोच्चो, मौजा सं0–320, मौजा–लोहपिट्टी, मौजा सं0–319 की जॉच कराई कई, जॉच प्रतिवेदन विहित प्रपत्र में तैयार की गई हैं, जिसकी मूल प्रति इस पत्र के साथ संलग्न कर आवश्यक कार्रवाई हेतु भेजा जाता हैं।

विश्वासभाजन
2.1.23
(कमल किशोर सिंह)
अंचल अधिकारी,
बाघमारा
02/1/23

State Level Environment Impact Assessment Authority ★ Jharkhand, Ranchi ★ Approved

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DR-10

सिंगड़ा - 347

हाल प्लाट - 6158

विहित प्रपत्र

III. Revised format for PP to get the following information/certification from Circle Officer:-

क्रम सं०	निर्धारित बिन्दु	हाँ/नहीं
1.	क्या आवेदित भूमि की कोटि सर्वे खतियान यथा रजिस्टर-II में जंगल झाड़ी के रूप में दर्ज है?	नहीं
2.	क्या 500 मीटर की दूरी के अंदर कोई मानव बसाहट (Habitation) स्थित है?	नहीं
3.	क्या 500 मीटर की दूरी के अंदर कोई जलीय निकाय (Dam/Reservoir) स्थित है?	नहीं
4.	क्या 500 मीटर की दूरी के अंदर कोई नदी (River) स्थित है?	नहीं
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 10 कि०मी० की परिधि में कोई अंतर्राज्यीय (Interstate) सीमा है?	नहीं
8.	क्या 500 मीटर की दूरी के अंदर कोई राष्ट्रीय धरोहर/पुरातत्वीय (Monuments/Archaeological) महत्व के स्थल स्थित है?	नहीं

The information required in serial no.-1 of above format are mandatory for each type of proposal to process the application for Environmental Clearance.

The Meeting concluded with vote of thanks to the Chairman.

नोट — मौजा सिंगड़ा 347 हाल प्लाट नं. 6158 के 500 मीटर के दूरी में रेलवे पुल एवं सड़क पुल अवस्थित है।

R.S.I. VII
31-12-22
पाउडर टुडू
अंचल अधिकारी
बाघमारा

Nelson,
अनुसंधित
02/01/23

2.1.23
अंचल अधिकारी
बाघमारा

State Level Environment Impact Assessment Authority
Approved
Jharkhand, Ranchi

Scanned with Any Scanner

नगदा — 327

प्लाट — 1574

DR-11

विहित प्रपत्र

III. Revised format for PP to get the following information/certification from Circle Officer:-

क्रम सं०	निर्धारित बिन्दु	हाँ/नहीं
1.	क्या आवेदित भूमि की कोटि सर्वे खतियान यथा रजिस्टर-II में जंगल झाड़ी के रूप में दर्ज है?	नहीं
2.	क्या 500 मीटर की दूरी के अंदर कोई मानव बसाहट (Habitation) स्थित है?	नहीं
3.	क्या 500 मीटर की दूरी के अंदर कोई जलीय निकाय (Dam/Reservoir) स्थित है?	नहीं
4.	क्या 500 मीटर की दूरी के अंदर कोई नदी (River) स्थित है?	नहीं
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 10 कि०मी० की परिधि में कोई अंतर्राज्यीय (Interstate) सीमा है?	नहीं
8.	क्या 500 मीटर की दूरी के अंदर कोई राष्ट्रीय धरोहर/पुरातत्वीय (Monuments/Archaeological) महत्व के स्थल स्थित है?	नहीं

The information required in serial no.-1 of above format are mandatory for each type of proposal to process the application for Environmental Clearance.

The Meeting concluded with vote of thanks to the Chairman.

R.S.I. VIII
31-12-22

पाकुड़ बुद्ध
अंचल अधिकारी
बाघमारा
31-12-22

महाशय,
अनुरक्षित
02/01/23

2.1.23
अंचल अधिकारी
बाघमारा

State Level Environment Impact Assessment Authority
Approved
Jharkhand, Ranchi

Scanned with Any Scanner

तेलमोचो - 320
प्लॉट — 3596,

विहित प्रपत्र

III. Revised format for PP to get the following information/certification from Circle Officer:-

क्रम सं०	निर्धारित बिन्दु	हाँ/नहीं
1.	क्या आवेदित भूमि की कोटि सर्वे खतियान यथा रजिस्टर-II में जंगल झाड़ी के रूप में दर्ज है?	नहीं
2.	क्या 500 मीटर की दूरी के अंदर कोई मानव बसाहट (Habitation) स्थित है?	नहीं
3.	क्या 500 मीटर की दूरी के अंदर कोई जलीय निकाय (Dam/Reservoir) स्थित है?	नहीं
4.	क्या 500 मीटर की दूरी के अंदर कोई नदी (River) स्थित है?	नहीं
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 10 किलोमीटर की परिधि में कोई अंतर्राज्यीय (Interstate) सीमा है?	नहीं
8.	क्या 500 मीटर की दूरी के अंदर कोई राष्ट्रीय धरोहर/ पुरातत्वीय (Monuments/Archaeological) महत्व के स्थल स्थित है?	नहीं

The information required in serial no.-1 of above format are mandatory for such type of proposal to process the application for Environmental Clearance.

The Meeting concluded with vote of thanks to the Chairman.

R.I. VIII
31-12-22

कार्यपालक दंडाधिकारी
बोकारो
31-12-22

अंचल अधिकारी
बोकारो
2.1.23

सहायक,
Assistant

State Level Environment Impact Assessment Authority ★ Jharkhand, Ranchi ★
Approved

Scanned with Any Scanner

लोहपीटी मौजा नं. 319
प्लाट सं० — 3403, 3399

DR-13

विहित प्रपत्र

III. Revised format for PP to get the following information/certification from Circle Officer:-

क्रम सं०	निर्धारित बिन्दु	हाँ/नहीं
1.	क्या आवेदित भूमि की कोटि सर्वे खतियान यथा रजिस्टर-II में जंगल झाड़ी के रूप में दर्ज है?	नहीं
2.	क्या 500 मीटर की दूरी के अंदर कोई मानव बसाहट (Habitation) स्थित है?	नहीं
3.	क्या 500 मीटर की दूरी के अंदर कोई जलीय निकाय (Dam/Reservoir) स्थित है?	नहीं
4.	क्या 500 मीटर की दूरी के अंदर कोई नदी (River) स्थित है?	नहीं
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 10 कि०मी० की परिधि में कोई अंतर्राज्यीय (Interstate) सीमा है?	नहीं
8.	क्या 500 मीटर की दूरी के अंदर कोई राष्ट्रीय धरोहर/पुरातत्वीय (Monuments/Archaeological) महत्व के स्थल स्थित है?	नहीं

The information required in serial no.-1 of above format are mandatory for each type of proposal to process the application for Environmental Clearance.

The Meeting concluded with vote of thanks to the Chairman.

* 3403 NEAR BRIDGE

R.S.I. VIII
31-12-22
पाईक टुडू
अंचल अधिकारी
बाघमारा

2.1.23
अंचल अधिकारी
बाघमारा

महाशय,
अग्रसारित
02/01/23

State Level Environment Impact Assessment Authority
Approved
Jharkhand, Ranchi

Scanned with Any Scanner

KH - 14

झारखण्ड सरकार

अंचल अधिकारी का कार्यालय, कलियासोल (धनबाद)।

दूरभाष नं0–8873594593 (M) ई–मेल–kaliasole.co@gmail.com

पत्रांक–.....01...../ दिनांक–.....02/01/23

प्रेषक,

दिवाकर दूबे, (झा0श0से0)
अंचल अधिकारी,
कलियासोल।

सेवा में,

जिला खनन पदाधिकारी,
धनबाद।

विषय :– Category-II बालू घाट के संचालन हेतु विहित प्रपत्र में प्रतिवेदन भेजने के संबंध में।
प्रसंग :– आपके पत्रांक–3384 / एम0, दिनांक–29.12.2022।

महाशय,

उपर्युक्त विषयक एवं प्रासंगिक पत्र के आलोक में Category-II बालू घाट के संचालन हेतु कलियासोल अंचल अन्तर्गत चिन्हित मौजा–जांजलपुर, थाना नं0–261 में उल्लेखित खाता/प्लॉट की जाँच संबंधित राजस्व उप निरीक्षक से करायी गयी। इनके द्वारा स्थानीय जाँचोपरान्त प्रतिवेदित किया गया है कि, मौजा–जांजलपुर, थाना नं0–261, हाल खाता सं0–77, हाल प्लॉट सं0–108/413, कुल रकवा–24.25 एकड़, किस्म–नदी, अनाबाद बिहार सरकार खाते की भूमि है जिसका विहित प्रपत्र में प्रतिवेदन निम्नवत् है :–

क्र0सं0	निर्धारित बिन्दु	हाँ/नहीं
1.	क्या आवेदित भूमि की कोटि सर्वे खतियान यथा रजिस्टर–II में जंगल झाड़ी के रूप में दर्ज है?	नहीं।
2.	क्या 500 मीटर की दूरी के अंदर कोई मानव बसाहट (Habitation) स्थित है?	नहीं।
3.	क्या 500 मीटर की दूरी के अंदर कोई जलीय निकाय (Dam/Reservoir) स्थित है?	नहीं।
4.	क्या 500 मीटर की दूरी के अंदर कोई नदी (River) 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 10 कि0मी0 की परिधि में कोई अंतर्राज्यीय (Interstate) सीमा है?	हाँ।
8.	क्या 500 मीटर की दूरी के अंदर कोई राष्ट्रीय धरोहर/पुरातत्वीय (Monuments/Archaeologibcal) महत्व के स्थल स्थित है?	नहीं।

जाँच प्रतिवेदन सूचनार्थ एवं आवश्यक कार्रवाई हेतु प्रेषित।

विश्वासभाजन

(दिवाकर दूबे, झा0श0से0)
अंचल अधिकारी,
कलियासोल।

State Level Environment Impact Assessment Authority
Approved
Jharkhand, Ranchi

BR-15

झारखण्ड सरकार

अंचल अधिकारी का कार्यालय, एग्यारकुण्ड (धनबाद)।

दूरभाष सं0–9470560579 Email:- egarkund.co@gmail.com

पत्रांक.....03...../ एग्यारकुण्ड, दिनांक–.....02/01/23.....

प्रेषक,

नितिन शिवम् गुप्ता, झा0प्र0से0
अंचल अधिकारी
एग्यारकुण्ड।

सेवा में,

जिला खनन पदाधिकारी,
धनबाद।

विषय :– Category-II बालु घाट के संचालन हेतु प्रतिवेदन के संबंध में।

प्रसंग:– आपका पत्रांक–3384 / एम0, धनबाद, दिनांक–29.12.2022।

महाशय,

उपर्युक्त विषयक एवं प्रासंगिक पत्र के संबंध में कहना है कि एग्यारकुण्ड अंचल अन्तर्गत Category II बालू घाट के संचालन हेतु विहित प्रपत्र में प्रतिवेदन की मांग की गई है। उक्त के आलोक में संबंधित राजस्व उप निरीक्षक, अंचल अमीन एवं अंचल निरीक्षक से जाँच कराई गई। उनके द्वारा प्रतिवेदित किया गया है कि मौजा–जांजलपुर एवं चाँच, मौजा नं0–261 एवं 260, KH14 Khudia River Category II के तहत् मांगी गई विवरणी केलियासोल अंचल अन्तर्गत आता है तथा BR15 Barakar River Category II के तहत् मांगी गई विवरणी निम्न है, जिसका गत खाता नं0–309, गत प्लॉट सं0–3958, रकवा–62 एकड़, किस्म–बालू जिसका हाल सर्वे के अनुसार हाल खाता नं0–523, हाल प्लॉट नं0–3806 / 4142, 3806 / 4143, 3796 / 4144, 3805 / 4145, 3805 / 4148 अनाबाद बिहार सरकार खाते की भूमि है। जिसकी प्रति संलग्न कर इस पत्र के साथ आवश्यक कार्रवाई हेतु भेजी जा रही है।

अनुलग्नक :– विहित प्रपत्र में संलग्न।

विश्वासभाजन

02/01/23

नितिन शिवम् गुप्ता, (झा0प्र0से0)
अंचल अधिकारी
एग्यारकुण्ड।

3/1/23

State Level Environment Impact Assessment Authority ★ Jharkhand, Ranchi ★
Approved

विहित प्रपत्र

iii Revised formal for PP to get the following Information/certification form Circle Officer :-

क्र0सं0	निर्धारित बिन्दु	हाँ/नहीं
1.	क्या आवेदित भूमि की कोटि सर्वे खतियान यथा रजिस्टर–II में जंगल झाड़ी के रूप में दर्ज है ?	नहीं
2.	क्या 500 मीटर की दूरी के अंदर कोई मानव बसाहट स्थित है ?	नहीं
3.	क्या 500 मीटर की दूरी के अंदर कोई जलीय निकाय स्थित है ?	नहीं
4.	क्या 500 मीटर की दूरी के अंदर कोई नदी स्थित है ?	हाँ
5.	क्या 500 मीटर की दूरी के अंदर कोई शैक्षणिक संस्थान स्थित है ?	नहीं
6.	क्या 500 मीटर की दूरी के अंदर कोई चिकित्सालय स्थित है ?	नहीं
7.	क्या 10 कि0मी0 की परिधि में कोई अंतर्राज्यीय सीमा है ?	हाँ
8.	क्या 500 मीटर की दूरी के अंदर कोई राष्ट्रीय धरोहर/पुरातत्वीय महत्व के स्थल स्थित है ?	नहीं

नितिन शिवम् गुप्ता, झा0प्र0से0
अंचल अधिकारी
एग्यारकुण्ड।
21/1/22

State Level Environment Impact Assessment Authority
Approved
Jharkhand, Ranchi

JM-16
As per
plot No

झारखण्ड सरकार

अंचल अधिकारी का कार्यालय, तोपचांची, (धनबाद)

co.topchachi@gmail.com

पत्रांक....08..../

प्रेषक,

(राकेश भुषण सिंह, झा0 प्र0 से0)
अंचल अधिकारी,
तोपचाँची।

सेवा में

जिला खनन पदाधिकारी,
धनबाद

तोपचाँची ,दिनांक..02/01/.....2023

विषय :– Category-II बालू घाट के संचालन हेतु प्रतिवेदन उपलब्ध कराने के संबंध में।
प्रसंगः– आपका पत्रांक–3384 / एम0, दिनांक–29.12.2022

महाशय,

उपर्युक्त विषयक प्रांसगिक पत्र के आलोक में Category-II बालू घाट के बावत संबंधित राजस्व उपनिरीक्षक एव प्रभारी अंचल निरीक्षक से जाँच करवाया गया। प्राप्त जाँच प्रतिवेदन **प्लॉट संख्या–5304, रकवा–14 ए0 50 डी0 किस्म–नदी खाता बिहार सरकार, आवेदित प्लॉट स0–2244, रकवा–02 डी0 किस्म–खम्हार, खाता रैयती, रैयत–आजीद मियां ई0** है एवं विवित प्रपत्र में प्रतिवेदन निम्नवत है: –

कं0 स0	निर्धारित बिन्दु	हाँ / नही
1	क्या आवेदित भूमि की कोटी सर्वे खतियान यथा रजिस्टर–II में जंगल झाड़ी के रूप में दर्ज है?	नही
2	क्या 500 मीटर की दूरी के अन्दर कोई मानव बसाहट स्थित है?	नही
3	क्या 500 मीटर की दूरी के अन्दर कोई जलीय निकाय स्थित है?	नही
4	क्या 500 मीटर की दूरी के अन्दर कोई नदी स्थित है?	नही
5	क्या 500 मीटर की दूरी के अन्दर कोई शैक्षानिक संस्थान स्थित है?	नही
6	क्या 500 मीटर की दूरी के अन्दर कोई चिकित्सालय स्थित है?	नही
7	क्या 10 कि0 मी0 की परिधि में कोई अंतर्राज्यीय सीमा है?	नही
8	क्या 500 मीटर की दूरी के अन्दर कोई राष्ट्रीय धरोहर / पुरातत्वीय महत्व के स्थल स्थित है?	नही

अतः प्रतिवेदन सूचनार्थ एवं आवश्यक कारवाई हेतु प्रेषित।

विश्वासभाजन
02/01/2023
(राकेश भुषण सिंह)
अंचल अधिकारी,
तोपचाँची।
02/1/2023

State Level Environment Impact Assessment Authority
Approved
Jharkhand, Ranchi

DR-17

अंचल अधिकारी का कार्यालय, पुर्वी टुण्डी (धनबाद)

Email : co.ptundi681@gmail.com सम्पर्क नं0–.....

पत्रांक ...62.....

प्रेषक,

राकेश भूषण सिंह(झा0प्र0से0)
अंचल अधिकारी,
पुर्वी टुण्डी

सेवा में,

जिला खनन पदाधिकारी,
धनबाद।

पुर्वी टुण्डी, दिनांक 11.02.2023

विषय :– Category-II बालू घाट के संचालन हेतु प्रतिवेदन उपलब्ध कराने के संबंध में।

प्रसंग :– जिला खनन पदाधिकारी, धनबाद का पत्रांक– 31/एम, धनबाद, दिनांक– 06.01.2023

महाशय,

उपर्युक्त विषयक प्रांसगिक पत्र के संबध में Category-II बालू घाट के संचालन हेतु प्राप्त पत्र के आलोक में हल्का राजस्व उप निरीक्षक एवं प्रभारी अंचल निरीक्षक के जाँच प्रतिवेदन इस पत्र के साथ विहित प्रपत्र में संलग्न कर आवश्यक कारवाई हेतु भेजा जाता हैं। जो निम्नवत् हैं:–

क्र0 सं0	निर्धारित बिन्दु	हाँ/नहीं
1.	क्या आवेदित भूमि की कोटी सर्वे खतियान यथा रजिस्टर–II में जंगल झाडी के रूप में दर्ज हैं?	नहीं
2.	क्या 500 मीटर की दूरी के अंदर कोई मानव वसाहट (Habitation) स्थित हैं?	नहीं
3.	क्या 500 मीटर की दूरी के अंदर कोई जलीय निकाय (Dam/Reservoir) स्थित हैं?	नहीं
4.	क्या 500 मीटर की दूरी के अंदर कोई नदी (River) स्थित हैं?	नहीं
5.	क्या 500 मीटर की दूरी के अंदर कोई कोई शैक्षणिक संस्थान (Education Institue) स्थित हैं?	नहीं
6.	क्या 500 मीटर की दूरी के अंदर कोई चिकित्सालय (Hospital) स्थित हैं?	नहीं
7.	क्या 10 कि0मी0 की परिधि में कोई अंतर्राज्यीय (Interstate) सीमा हैं?	नहीं
8.	क्या 500 मीटर की दूरी के अंदर कोई राष्ट्रीय धरोहर/पुरातत्वीय (Monuments Archncological) महत्व के स्थल स्थित हैं?	नहीं

सदर सूचनार्थ समर्पित।

अनुः– यथोक्त

विश्वासभाजन

11.02.2023
राकेश भूषण सिंह (झा0प्र0से0)
अंचल अधिकारी,
पुर्वी टुण्डी

State Level Environment Impact Assessment Authority ★ Jharkhand, Ranchi ★ Approved

झारखण्ड सरकार

अंचल अधिकारी का कार्यालय, झरिया।

दूरभाष संख्या– 25272(झारनेट), ई मेल :– co_jharia@rediffmail.com

पत्रांक–350 / दिनांक–04 / 03 / 2023

प्रेषक,

प्रमेश कुशवाहा (झा0प्र0से0)
अंचल अधिकारी,
झरिया।

सेवा में,

सहायक निदेशक, भूतत्व
जिला भूतात्विक कार्यालय,
बोकारो।

विषय :– Category-II बालू घाट के संचालन हेतु प्रतिवेदन उपलब्ध कराने के संबंध में।

प्रसंग :– आपका पत्रांक–स0नि0भू0–14 / 2022–23–58, दिनांक–03.02.2023

महाशय,

उपर्युक्त विषयक प्रासंगिक पत्र के संदर्भ में कहना है कि झरिया अंचल अंतर्गत Category-II बालू घाट से संबंधित प्रतिवेदन राजस्व उप निरीक्षक से प्राप्त है। प्राप्त प्रतिवेदनानुसार मौजा–भौंरा मौजा नं0–112 का स्थानीय जाँचोपरान्त हल्का में उपलब्ध हाल सर्वे खतियान के अनुसार उक्त मौजा के खाता नं0–186 का प्लॉट नं0–2235 रकवा–04 डी0 किस्म बाईद है एवं प्लॉट नं0–74 रकवा–46.10 ए0 किस्म नदी हाल सर्वे खतियान के अनुसार अनाबाद बिहार सरकार दर्ज है। प्लॉट नं0–2235 नदी से लगभग 2300 फिट की दूरी पर अवस्थित है। विहित प्रपत्र में निर्धारित बिन्दु से संबंधित प्रतिवेदन इस पत्र के साथ संलग्न कर आवश्यक कारवाई हेतु भेजा जाता है।

अनु0–विहित प्रपत्र।

विश्वासभाजन

03/03/23

(प्रमेश कुशवाहा)
अंचल अधिकारी,
झरिया।

State Level Environment Impact Assessment Authority
Approved
Jharkhand, Ranchi

मौजा - भौरा मौजा सं० 112 का बालू - घाट प्रतिवेदन
खाता 186 प्लॉट 74(P) का जाँच प्रतिवेदन

विहित प्रपत्र

क्र0 सं0	निर्धारित बिन्दु	हाँ / नहीं
1	क्या आवेदित भूमि की कोटि सर्वे खतियान यथा रजिस्टर–II में जंगल झाड़ी के रूप में दर्ज है?	नहीं
2	क्या 500 मीटर की दूरी के अंदर कोई मानव (Habitation) बसाहट स्थित है?	हाँ
3	क्या 500 मीटर की दूरी के अंदर कोई जलीय निकाय (Dam/Reservoir) स्थित है?	नहीं
4	क्या 500 मीटर की दूरी के अंदर कोई नदी (River) स्थित है?	हाँ
5	क्या 500 मीटर की दूरी के अंदर कोई शैक्षणिक संस्थान (Educational Institute) स्थित है?	हाँ
6	क्या 500 मीटर की दूरी के अंदर कोई चिकित्सालय (Hospital) स्थित है?	हाँ
7	क्या 10 कि0मी0 की परिधि में कोई अंतर्राज्यीय (Interstate) सीमा है?	नहीं
8	क्या 500 मीटर की दूरी के अंदर कोई राष्ट्रीय धरोहर / पुरातत्वीय (Monuments/Archaeological) महत्त्व के स्थल स्थित है?	नहीं

RSI
प्र०अ० अमीन
सरिया

प्रमाणित
प्रमाणित
03.03.23

3/3/23

State Level Environment Impact Assessment Authority
Approved
Jharkhand, Ranchi

झारखण्ड सरकार
खान एवं भुतत्व विभाग
जिला भूतात्विक कार्यालय,बोकारो

बोकारो, दिनांक– 3.2.2023

पत्रांक–स0नि0भू0-14/22-23-58

प्रेषक,

सहायक निदेशक,भूतत्व
जिला भुतात्विक कार्यालय,
बोकारो ।

सेवामें,

अंचल अधिकारी
झरिया ।

विषय :– Category-II बालू घाट के संचालन हेतु प्रतिवेदन उपलब्ध कराने के संबंध में

महाशय,

उपर्युक्त विषयक के संबंध में कहना है कि Category-II बालू घाट की जानकारी उपलब्ध कराने की कृपा करेगें जो निम्नवत है–

खाता संख्या	प्लॉट संख्या	अभ्युक्ति
186	2235P, 74P	मौजा–भंवरा,मौजा संख्या–112

Area – 9.95 Ha

विश्वासभाजन

3.2.2023.
सहायक निदेशक,भूतत्व
जिला भुतात्विक कार्यालय बोकारो ।

State Level Environment Impact Assessment Authority
Approved
Jharkhand, Ranchi

ANNEXURE-02

COPY OF DFO LETTER

कार्यालय : वन प्रमण्डल पदाधिकारी, धनबाद वन प्रमण्डल।

(मिश्रित भवन, लुबी सर्कुलर रोड, धनबाद)
0326-2313385
9471192101, 8987790305
Email– dfodhanbad@gmail.com
dfo-dhanbad@gov.in

पत्रांक :– 476 दिनांक :– 21-02-2023

सेवा में,

सहायक निदेशक, भूतत्व,
जिला भूतात्विक कार्यालय,
बोकारो।

विषय :– Category-II बालू घाट हेतु चिन्हित स्थल का दूरी प्रमाण–पत्र के संबंध में।

प्रसंग :– जिला खनन् पदाधिकारी का पत्रांक– 3388/एम0, धनबाद दिनांक– 29.12.2022 एवं आपका कार्यालय पत्रांक– स0नि0भू0: 14/2022–23 47 बोकारो दिनांक– 21.02.2023

महाशय,

उपरोक्त विषयक प्रासंगिक पत्र के संबंध में सूचित करना है कि Jharkhand State Sand Mining Policy, 2017 के अनुसार झारखण्ड राज्य में बालू का उठाव एवं प्रेषण किया जाएगा। उक्त Policy के तहत JSMDC द्वरा संचालित बालूघाटों अथवा सरकार द्वारा प्राधिकृत अन्य बालूघाटों को संचालन JSMDC द्वारा किया जाना है। धनबाद जिला हेतु बालू खनिज का DSR का Draft copy तैयार किया गया है, जिसमें कुल 17 Category-II बालू घाटों को संचालन हेतु चिन्हित किया गया है। उक्त सभी बालूघाटों का Geo-Coordinate भेजकर उन स्थलों की वनभूमि से दूरी के संबंध में विहित प्रपत्र में जाँच प्रतिवेदन उपलब्ध कराने का अनुरोध किया गया है।

सभी Category-II बालूघाटों के संबंध में विहित प्रपत्र में जाँच प्रतिवेदन इस पत्र के साथ संलग्न कर सूचनार्थ एवं आवश्यक कार्रवाई हेतु प्रेषित की जा रही है।

विश्वासभाजन

21/2/23

वन प्रमण्डल पदाधिकारी,
धनबाद।

अनु0– यथोक्त।

State Level Environment Impact Assessment Authority ★ Jharkhand, Ranchi ★
Approved

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विहित प्रपत्र

iv. Revised format for project proposal to get the following information / certification from Divisional Forest Officer concerned :-

क्रम सं0	निर्धारित बिन्दु	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं
1	2	3	4	5	6	7	8	9
	Details of potential mining lease :- UIN- **DR1** River Details :- **Damodar River Category-II** Lease Details :- **Mouza- Tasra, Mouza No.- 168, Block-Jharia, District- Dhanbad, Thana No.- 0165, Plot No.- 786, Toposheet No.- 73/6** **Geo-Coordinate** ⟶	**23° 38' 47.77" N 86° 27' 41.60" E**	**23° 38' 41.52" N 86° 27' 49.72" E**	**23° 38' 33.80" N 86° 27' 58.09" E**	**23° 38' 29.35" N 86° 28' 5.91" E**	**23° 38' 12.56" N 86° 27' 59.97" E**	**23° 38' 25.69" N 86° 27' 40.26" E**	**23° 38' 34.33" N 86° 27' 31.74" E**
1.	क्या परियोजना स्थल से आरक्षित वन / संरक्षित वन भूमि से दूरी 250 मी0 से ज्यादा है?	हाँ 1160मी0	हाँ 1800मी0	हाँ 1900मी0	हाँ 1900मी0	हाँ 2300मी0	हाँ 1600मी0	हाँ 1300मी0
2.	क्या परियोजना स्थल No Mining Zone अंतर्गत आता है?	No Mining Zone data with DMO						
3.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई नेशलन पार्क है?	—	—	—	—	—	—	—
4.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई अभ्यारण्य एवं जैव विविधता क्षेत्र है?	—	—	—	—	—	—	—
5.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई इको सेंसिटिव जोन (Eco Sensitive Zone) है?	—	—	—	—	—	—	—
6.	क्या आवेदित परियोजना ESZ के अन्तर्गत प्रबंधित श्रेणी में आता है अथवा नहीं?	—	—	—	—	—	—	—

Approved
Jharkhand, Ranchi ★ State Level Environment Impact Assessment Authority ★

The information required in serial no. 1 and 2 of above format will be certified by the territorial DFOs and rest information (Sl. No. - 3 to 6) of above Format will be certified by the Wild Life DFOs.

Divisional Forest Officer
Dhanbad

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विहित प्रपत्र

iv. Revised format for project proposal to get the following information / certification from Divisional Forest Officer concerned :-

क्रम सं0	निर्धारित बिन्दु	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं
1	2	3	4	5	6	7	8
	Details of potential mining lease :- UIN- **DR2** River Details :- **Damodar River Category-II** Lease Details :- **Mouza- Het Kandra, Mouza No.- 167, Block- Jharia, District- Dhanbad, Thana No.- 0165, Plot No.- 785, Toposheet No.- 73/6** **Geo-Coordinate** ⟶	**23° 38' 56.11" N 86° 27' 22.07" E**	**23° 38' 52.86" N 86° 27' 34.24" E**	**23° 38' 47.77" N 86° 27' 41.60" E**	**23° 38' 38.08" N 86° 27' 34.49" E**	**23° 38' 44.98" N 86° 27' 27.50" E**	**23° 38' 51.41" N 86° 27' 20.40" E**
1.	क्या परियोजना स्थल से आरक्षित वन / संरक्षित वन भूमि से दूरी 250 मी0 से ज्यादा है?	हाँ 600मी0	हाँ 1800मी0	हाँ 1800मी0	हाँ 1200मी0	हाँ 950मी0	हाँ 600मी0
2.	क्या परियोजना स्थल No Mining Zone अंतर्गत आता है?	No Mining Zone data with DMO					
3.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई नेशलन पार्क है?	—	—	—	—	—	—
4.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई अभ्यारण्य एवं जैव विविधता क्षेत्र है?	—	—	—	—	—	—
5.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई इको सेंसिटिव जोन (Eco Sensitive Zone) है?	—	—	—	—	—	—
6.	क्या आवेदित परियोजना ESZ के अन्तर्गत प्रबंधित श्रेणी में आता है अथवा नहीं?	—	—	—	—	—	—

The information required in serial no. 1 and 2 of above format will be certified by the territorial DFOs and rest information (Sl. No. - 3 to 6) of above Format will be certified by the Wild Life DFOs.

Approved
State Level Environment Impact Assessment Authority * Jharkhand, Ranchi *

Divisional Forest Officer
Dhanbad

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विहित प्रपत्र

iv. Revised format for project proposal to get the following information / certification from Divisional Forest Officer concerned :-

क्रम सं0	निर्धारित बिन्दु	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं
1	2	3	4	5	6	7	8
	Details of potential mining lease :- UIN- **DR3** River Details :- **Damodar River Category-II** Lease Details :- **Mouza- Chasnala, Mouza No.- 165, Block-Jharia, Thana No.- 0165, District- Dhanbad, Plot No.- 960, Toposheet No.- 73/6** **Geo-Coordinate** ⟶	**23° 39' 7.87" N 86° 26' 37.75" E**	**23° 38' 59.92" N 86° 27' 0.47" E**	**23° 38' 56.11" N 86° 27' 22.07" E**	**23° 38' 46.41" N 86° 27' 18.36" E**	**23° 38' 52.87" N 86° 26' 56.35" E**	**23° 39' 0.54" N 86° 26' 35.12" E**
1.	क्या परियोजना स्थल से आरक्षित वन / संरक्षित वन भूमि से दूरी 250 मी0 से ज्यादा है?	हाँ 400मी0	हाँ 300मी0	हाँ 600मी0	हाँ 750मी0	हाँ 500मी0	हाँ 550मी0
2.	क्या परियोजना स्थल No Mining Zone अंतर्गत आता है?	No Mining Zone data with DMO					
3.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई नेशलन पार्क है?	—	—	—	—	—	—
4.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई अभ्यारण्य एवं जैव विविधता क्षेत्र है?	—	—	—	—	—	—
5.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई इको सेंसिटिव जोन (Eco Sensitive Zone) है?	—	—	—	—	—	—
6.	क्या आवेदित परियोजना ESZ के अन्तर्गत प्रबंधित श्रेणी में आता है अथवा नहीं?	—	—	—	—	—	—

The information required in serial no. 1 and 2 of above format will be certified by the territorial DFOs and rest information (Sl. No. - 3 to 6) of above Format will be certified by the Wild Life DFOs.

Approved — Jharkhand State Level Environment Impact Assessment Authority, Ranchi

Divisional Forest Officer

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विहित प्रपत्र

iv. Revised format for project proposal to get the following information / certification from Divisional Forest Officer concerned :-

क्रम सं0	निर्धारित बिन्दु	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं
1	2	3	4	5	6
	Details of potential mining lease :- UIN- **DR4** River Details :- **Damodar River Category-II** Lease Details :- **Mouza- Jajajtand (Bhowra), Block- Jhariya, Thana No.- 0112, District- Dhanbad, Plot No.- 2752(P), Toposheet No.- 73/6 Geo-Coordinate** ⟶	**23° 40' 44.08" N 86° 23' 2.41" E**	**23° 40' 43.94" N 86° 23' 5.37" E**	**23° 40' 34.02" N 86° 23' 6.06" E**	**23° 40' 33.67" N 86° 23' 2.83" E**
1.	क्या परियोजना स्थल से आरक्षित वन / संरक्षित वन भूमि से दूरी 250 मी0 से ज्यादा है?	हाँ 4000मी0	हाँ 4000मी0	हाँ 4000मी0	हाँ 4000मी0
2.	क्या परियोजना स्थल No Mining Zone अंतर्गत आता है?	No Mining Zone data with DMO			
3.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई नेशलन पार्क है?	—	—	—	—
4.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई अभ्यारण्य एवं जैव विविधता क्षेत्र है?	—	—	—	—
5.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई इको सेंसिटिव जोन (Eco Sensitive Zone) है?	—	—	—	—
6.	क्या आवेदित परियोजना ESZ के अन्तर्गत प्रबंधित श्रेणी में आता है अथवा नहीं?	—	—	—	—

The information required in serial no. 1 and 2 of above format will be certified by the territorial DFOs and rest information (Sl. No. - 3 to 6) of above Format will be certified by the Wild Life DFOs.

State Level Environment Impact Assessment Authority * Jharkhand, Ranchi * Approved

Divisional Forest Officer
Dhanbad

विहित प्रपत्र

iv. Revised format for project proposal to get the following information / certification from Divisional Forest Officer concerned :-

क्रम सं0	निर्धारित बिन्दु	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं
1	2	3	4	5	6	7	8
	Details of potential mining lease :- UIN- **DR5** River Details :- **Damodar River Category-II** Lease Details :- **Mouza- Petia, Block- Dhanbad, Thana No.- 0107, District- Dhanbad, Plot No.- 2235(P), 74(P), Toposheet No.- 73/6** **Geo-Coordinate** ⟶	**23° 41' 7.34" N 86° 23' 0.47" E**	**23° 41' 24.83" N 86° 22' 54.36" E**	**23° 41' 27.35" N 86° 22' 51.45" E**	**23° 41' 30.82" N 86° 22' 54.09" E**	**23° 41' 25.71" N 86° 22' 59.16" E**	**23° 41' 7.64" N 86° 23' 5.73" E**
1.	क्या परियोजना स्थल से आरक्षित वन/संरक्षित वन भूमि से दूरी 250 मी0 से ज्यादा है?	हाँ 3400मी0	हाँ 2800मी0	हाँ 2700मी0	हाँ 2700मी0	हाँ 2900मी0	हाँ 3000मी0
2.	क्या परियोजना स्थल No Mining Zone अंतर्गत आता है?	No Mining Zone data with DMO					
3.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई नेशलन पार्क है?	—	—	—	—	—	—
4.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई अभ्यारण्य एवं जैव विविधता क्षेत्र है?	—	—	—	—	—	—
5.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई इको सेंसिटिव जोन (Eco Sensitive Zone) है?	—	—	—	—	—	—
6.	क्या आवेदित परियोजना ESZ के अन्तर्गत प्रबंधित श्रेणी में आता है अथवा नहीं?	—	—	—	—	—	—

The information required in serial no. 1 and 2 of above format will be certified by the territorial DFOs and rest information (Sl. No. - 3 to 6) of above Format will be certified by the Wild Life DFOs.

Divisional Forest Officer
Dhanbad

Approved
State Level Environment Impact Assessment Authority (Jharkhand, Ranchi)

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विहित प्रपत्र

iv. Revised format for project proposal to get the following information / certification from Divisional Forest Officer concerned :-

क्रम सं0	निर्धारित बिन्दु	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं
1	2	3	4	5	6	7	8	9	10	11
	Details of potential mining lease :- UIN- **DR6** River Details :- **Damodar River Category-II** Lease Details :- **Mouza- Dungrighat, Mouza No. – 111, Block- Dhanbad, Thana No.- 0107, Plot No.- 01, Toposheet No.- 73/6** **Geo-Coordinate** ⟶	23° 42' 7.94" N 86° 22' 25.47" E	23° 41' 53.14" N 86° 22' 22.54" E	23° 41' 42.15" N 86° 22' 29.94" E	23° 41' 35.08" N 86° 22' 26.76" E	23° 41' 37.14" N 86° 22' 22.25" E	23° 41' 35.34" N 86° 22' 20.03" E	23° 41' 40.52" N 86° 22' 13.15" E	23° 41' 53.39" N 86° 22' 11.53" E	23° 42' 11.90" N 86° 22' 16.99" E
1.	क्या परियोजना स्थल से आरक्षित वन / संरक्षित वन भूमि से दूरी 250 मी0 से ज्यादा है?	हाँ 1200मी0	हाँ 1400मी0	हाँ 2100मी0	हाँ 2300मी0	हाँ 2200मी0	हाँ 2250मी0	हाँ 2200मी0	हाँ 1700मी0	हाँ 1100मी0
2.	क्या परियोजना स्थल No Mining Zone अंतर्गत आता है?	No Mining Zone data with DMO								
3.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई नेशलन पार्क है?	—	—	—	—	—	—	—	—	—
	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई अभ्यारण्य एवं जैव विविधता क्षेत्र है?	—	—	—	—	—	—	—	—	—
	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई इको सेंसिटिव जोन (Eco Sensitive Zone) है?	—	—	—	—	—	—	—	—	—
	क्या आवेदित परियोजना ESZ के अन्तर्गत प्रबंधित श्रेणी में आता है अथवा नहीं?	—	—	—	—	—	—	—	—	—

The information required in serial no. 1 and 2 of above format will be certified by the territorial DFOs and rest information (Sl. No. - 3 to 6) of above Format will be certified by the Wild Life DFOs.

Divisional Forest Officer

State Level Environment Impact Assessment Authority Jharkhand, Ranchi
Approved

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विहित प्रपत्र

iv. Revised format for project proposal to get the following information / certification from Divisional Forest Officer concerned :-

क्रम सं0	निर्धारित बिन्दु	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं
1	2	3	4	5	6
	Details of potential mining lease :- UIN- **DR7** River Details :- **Damodar River Category-II** Lease Details :- **Mouza- Dungri-patia, Anchal-Jharia, District- Dhanbad, Khata No. – 126, Plot No.- 01, Thana No.- 0107, Toposheet No.- 73/6** **Geo-Coordinate** ⟶	**23° 42' 7.94" N 86° 22' 25.47" E**	**23° 41' 53.14" N 86° 22' 22.54" E**	**23° 41' 42.15" N 86° 22' 29.94" E**	**23° 41' 35.08" N 86° 22' 26.76" E**
1.	क्या परियोजना स्थल से आरक्षित वन / संरक्षित वन भूमि से दूरी 250 मी0 से ज्यादा है?	हाँ 1300मी0	हाँ 1700मी0	हाँ 1300मी0	हाँ 750मी0
2.	क्या परियोजना स्थल No Mining Zone अंतर्गत आता है?	No Mining Zone data with DMO			
3.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई नेशलन पार्क है?	—	—	—	—
4.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई अभ्यारण्य एवं जैव विविधता क्षेत्र है?	—	—	—	—
5.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई इको सेंसिटिव जोन (Eco Sensitive Zone) है?	—	—	—	—
6.	क्या आवेदित परियोजना ESZ के अन्तर्गत प्रबंधित श्रेणी में आता है अथवा नहीं?	—	—	—	—

The information required in serial no. 1 and 2 of above format will be certified by the territorial DFOs and rest information (Sl. No. - 3 to 6) of above Format will be certified by the Wild Life DFOs.

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iv. Revised format for project proposal to get the following information / certification from Divisional Forest Officer concerned :-

क्रम सं0	निर्धारित बिन्दु	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं
1	2	3	4	5	6
	Details of potential mining lease :- UIN- **DR8** River Details :- **Damodar River Category-II** Lease Details :- **Mouza- Dungri-patia, Anchal-Putki & Dhanbad, District- Dhanbad, Khata No. – 201, Plot No.- 1755New & 736P, Thana No.- 0106 & 107, Toposheet No.- 73/6** **Geo-Coordinate** ⟶	**23° 42' 47.47" N 86° 22' 6.16" E**	**23° 42' 42.04" N 86° 22' 27.45" E**	**23° 42' 34.31" N 86° 22' 32.51" E**	**23° 42' 40.66" N 86° 22' 6.45" E**
1.	क्या परियोजना स्थल से आरक्षित वन / संरक्षित वन भूमि से दूरी 250 मी0 से ज्यादा है?	नहीं 67मी0	हाँ 510मी0	हाँ 750मी0	नहीं 210मी0
2.	क्या परियोजना स्थल No Mining Zone अंतर्गत आता है?	No Mining Zone data with DMO			
3.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई नेशलन पार्क है?	—	—	—	—
4.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई अभ्यारण्य एवं जैव विविधता क्षेत्र है?	—	—	—	—
5.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई इको सेंसिटिव जोन (Eco Sensitive Zone) है?	—	—	—	—
6.	क्या आवेदित परियोजना ESZ के अन्तर्गत प्रबंधित श्रेणी में आता है अथवा नहीं?	—	—	—	—

The information required in serial no. 1 and 2 of above format will be certified by the territorial DFOs and rest information (Sl. No. - 3 to 6) of above Format will be certified by the Wild Life DFOs.

Divisional Forest Officer
Dhanbad

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iv. Revised format for project proposal to get the following information / certification from Divisional Forest Officer concerned :-

क्रम सं0	निर्धारित बिन्दु	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं
	2	3	4	5	6	7	8	9	10
	Details of potential mining lease :- UIN- **DR9** River Details :- **Damodar River Category-II** Lease Details :- **Mouza- Tetangabad, Block-Dhanbad, Thana No.- 0078, District-Dhanbad, Plot No.- 253(P), Toposheet No.- 73/6** **Geo-Coordinate ⟶**	**23° 42' 28.51" N 86° 20' 38.01" E**	**23° 42' 20.67" N 86° 20' 33.18" E**	**23° 42' 18.41" N 86° 19' 58.54" E**	**23° 42' 34.65" N 86° 19' 26.16" E**	**23° 42' 37.69" N 86° 19' 31.09" E**	**23° 42' 21.47" N 86° 19' 59.43" E**	**23° 42' 25.62" N 86° 20' 30.35" E**	**23° 42' 31.75" N 86° 20' 33.33" E**
	क्या परियोजना स्थल से आरक्षित वन / संरक्षित वन भूमि से दूरी 250 मी0 से ज्यादा है?	हाँ 1700मी0	हाँ 2000मी0	हाँ 2900मी0	हाँ 3600मी0	हाँ 3500मी0	हाँ 2400मी0	हाँ 2000मी0	हाँ 1800मी0
	क्या परियोजना स्थल No Mining Zone अंतर्गत आता है?	No Mining Zone data with DMO							
	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई नेशलन पार्क है?	—	—	—	—	—	—	—	—
	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई अभ्यारण्य एवं जैव विविधता क्षेत्र है?	—	—	—	—	—	—	—	—
	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई इको सेंसिटिव जोन (Eco Sensitive Zone) है?	—	—	—	—	—	—	—	—
	क्या आवेदित परियोजना ESZ के अन्तर्गत प्रबंधित श्रेणी में आता है अथवा नहीं?	—	—	—	—	—	—	—	—

The information required in serial no. 1 and 2 of above format will be certified by the territorial DFOs and rest information (Sl. No. - 3 to 6) of above Format will be certified by the Wild Life DFOs.

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iv. Revised format for project proposal to get the following information / certification from Divisional Forest Officer concerned :-

क्रम सं0	निर्धारित बिन्दु	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं
1	2	3	4	5	6
	Details of potential mining lease :- UIN- **DR10** River Details :- **Damodar River Category-II** Lease Details :- **Mouza- Mahuda, Block-Baghmara, Thana No.- 0342, District- Dhanbad, Plot No.- 2283(P), Toposheet No.- 73/6** **Geo-Coordinate** ⟶	**23° 43' 1.65" N 86° 16' 59.13" E**	**23° 43' 4.08" N 86° 16' 57.52" E**	**23° 43' 10.69" N 86° 17' 13.91" E**	**23° 43' 7.45" N 86° 17' 15.25" E**
1.	क्या परियोजना स्थल से आरक्षित वन / संरक्षित वन भूमि से दूरी 250 मी0 से ज्यादा है?	हाँ 5050मी0	हाँ 5000मी0	हाँ 5000मी0	हाँ 5500मी0
2.	क्या परियोजना स्थल No Mining Zone अंतर्गत आता है?	No Mining Zone data with DMO			
3.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई नेशलन पार्क है?	—	—	—	—
4.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई अभ्यारण्य एवं जैव विविधता क्षेत्र है?	—	—	—	—
5.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई इको सेंसिटिव जोन (Eco Sensitive Zone) है?	—	—	—	—
6.	क्या आवेदित परियोजना ESZ के अन्तर्गत प्रबंधित श्रेणी में आता है अथवा नहीं?	—	—	—	—

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Dhanbad

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Revised format for project proposal to get the following information / certification from Divisional Forest Officer concerned :-

क्रम सं0	निर्धारित बिन्दु	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं
1	2	3	4	5	6	7	8
	Details of potential mining lease :- UIN- **DR11** River Details :- **Damodar River Category-II** Lease Details :- **Mouza- Nagda, Block- Baghmara, Thana No.- 0327, District- Dhanbad, Plot No.- 1574(P), Toposheet No.-73/12** **Geo-Coordinate** ⟶	**23° 42' 40.68" N 86° 14' 36.11" E**	**23° 42' 43.75" N 86° 14' 38.18" E**	**23° 42' 40.89" N 86° 14' 46.23" E**	**23° 42' 40.26" N 86° 14' 52.94" E**	**23° 42' 41.85" N 86° 15' 8.29" E**	**23° 42' 39.16" N 86° 15' 8.64" E**
1.	क्या परियोजना स्थल से आरक्षित वन / संरक्षित वन भूमि से दूरी 250 मी0 से ज्यादा है?	हाँ 950मी0	हाँ 1000मी0	हाँ 1200मी0	हाँ 1400मी0	हाँ 1800मी0	हाँ 1800मी0
2.	क्या परियोजना स्थल No Mining Zone अंतर्गत आता है?	No Mining Zone data with DMO					
3.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई नेशलन पार्क है?	—	—	—	—	—	—
4.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई अभ्यारण्य एवं जैव विविधता क्षेत्र है?	—	—	—	—	—	—
5.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई इको सेंसिटिव जोन (Eco Sensitive Zone) है?	—	—	—	—	—	—
6.	क्या आवेदित परियोजना ESZ के अन्तर्गत प्रबंधित श्रेणी में आता है अथवा नहीं?	—	—	—	—	—	—

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Divisional Forest Officer
Dhanbad

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iv. Revised format for project proposal to get the following information / certification from Divisional Forest Officer concerned :-

क्रम सं0	निर्धारित बिन्दु	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं
1	2	3	4	5	6
	Details of potential mining lease :- UIN- **DR12** River Details :- **Damodar River Category-II** Lease Details :- **Mouza- Kungi, Block-Baghmara, Thana No.- 0321, District- Dhanbad, Plot No.- 3596(P), Toposheet No.- 73/12** **Geo-Coordinate** ⟶	**23° 42' 48.58" N 86° 12' 39.32" E**	**23° 42' 53.31" N 86° 12' 42.16" E**	**23° 42' 40.09" N 86° 13' 30.57" E**	**23° 42' 36.94" N 86° 13' 30.52" E**
1.	क्या परियोजना स्थल से आरक्षित वन / संरक्षित वन भूमि से दूरी 250 मी0 से ज्यादा है?	नहीं 180मी0	नहीं 30मी0	नहीं 50मी0	नहीं 120मी0
2.	क्या परियोजना स्थल No Mining Zone अंतर्गत आता है?	No Mining Zone data with DMO			
3.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई नेशलन पार्क है?	—	—	—	—
4.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई अभ्यारण्य एवं जैव विविधता क्षेत्र है?	—	—	—	—
5.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई इको सेंसिटिव जोन (Eco Sensitive Zone) है?	—	—	—	—
6.	क्या आवेदित परियोजना ESZ के अन्तर्गत प्रबंधित श्रेणी में आता है अथवा नहीं?	—	—	—	—

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iv. Revised format for project proposal to get the following information / certification from Divisional Forest Officer concerned :-

क्रम सं0	निर्धारित बिन्दु	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं
1	2	3	4	5	6	7
	Details of potential mining lease : UIN- **DR13** River Details :- **Damodar River Category-II** Lease Details :- **Mouza- Lohpiti, Block- Baghmara, Thana No.- 0319, Dist.- Dhanbad, Plot No.- 3399(P), Toposheet No.- 73/12** **Geo-Coordinate** →	**23° 43' 9.92" N 86° 11' 31.41" E**	**23° 43' 21.23" N 86° 11' 36.26" E**	**23° 43' 37.53" N 86° 10' 53.50" E**	**23° 43' 35.14" N 86° 10' 44.23" E**	**23° 43' 11.12" N 86° 11' 20.02" E**
1.	क्या परियोजना स्थल से आरक्षित वन / संरक्षित वन भूमि से दूरी 250 मी0 से ज्यादा है?	हाँ 350मी0	नहीं 25मी0	नहीं 15मी0	नहीं 225मी0	हाँ 500मी0
2.	क्या परियोजना स्थल No Mining Zone अंतर्गत आता है?	—	—	—	—	—
3.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई नेशलन पार्क है?	—	—	—	—	—
4.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई अभ्यारण्य एवं जैव विविधता क्षेत्र है?	—	—	—	—	—
5.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई इको सेंसिटिव जोन (Eco Sensative Zone) है?	—	—	—	—	—
6.	क्या आवेदित परियोजना ESZ के अन्तर्गत प्रकाशित श्रेणी मे आता है अथवा नही?	—	—	—	—	—

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State Level Environment Impact Assessment Authority
Jharkhand, Ranchi

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Divisional Forest Officer
Dhanbad

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क्रम सं0	निर्धारित बिन्दु	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं
1	2	3	4	5	6	7	8	9	10
	Details of potential mining lease :- UIN- **KH14** River Details :- **Khudia River Category-II** Lease Details :- **Mouza- Jajalpur, Block- Nirsa, Thana No.- 0261, Dist.- Dhanbad, Plot No.- 370(P),413(P), Toposheet No.- 73/14** **Geo-Coordinate** ⟶	**23° 42' 46.63" N 86° 46' 28.96" E**	**23° 42' 41.59" N 86° 46' 37.04" E**	**23° 42' 29.69" N 86° 46' 47.28" E**	**23° 42' 11.31" N 86° 46' 50.16" E**	**23° 42' 8.49" N 86° 46' 48.27" E**	**23° 42' 27.81" N 86° 46' 44.16" E**	**23° 42' 36.65" N 86° 46' 39.03" E**	**23° 42' 44.63" N 86° 46' 27.57" E**
1.	क्या परियोजना स्थल से आरक्षित वन / संरक्षित वन भूमि से दूरी 250 मी0 से ज्यादा है?	हाँ 480मी0	हाँ 500मी0	हाँ 700मी0	हाँ 400मी0	नहीं 200मी0	हाँ 500मी0	हाँ 450मी0	हाँ 400मी0
2.	क्या परियोजना स्थल No Mining Zone अंतर्गत आता है?	No Mining Zone data with DMO							
3.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई नेशलन पार्क है?	—	—	—	—	—	—	—	—
4.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई अभ्यारण्य एवं जैव विविधता क्षेत्र है?	—	—	—	—	—	—	—	—
5.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई इको सेंसिटिव जोन (Eco Sensitive Zone) है?	—	—	—	—	—	—	—	—
6.	क्या आवेदित परियोजना ESZ के अन्तर्गत प्रबंधित श्रेणी में आता है अथवा नहीं?	—	—	—	—	—	—	—	—

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क्रम सं0	निर्धारित बिन्दु	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं
1	2	3	4	5	6
	Details of potential mining lease :- UIN- **BR15** River Details :- **Barakar River Category-II** Lease Details :- **Mouza- Dumarkunda, Block- Nirsa, Thana No.- 0256, District- Dhanbad, Plot No.- 4088P, Toposheet No.- 73/14** **Geo-Coordinate** →	**23° 42' 59.79" N 86° 47' 55.16" E**	**23° 42' 51.35" N 86° 48' 3.45" E**	**23° 42' 17.39" N 86° 47' 49.37" E**	**23° 42' 19.36" N 86° 47' 42.61" E**
1.	क्या परियोजना स्थल से आरक्षित वन / संरक्षित वन भूमि से दूरी 250 मी0 से ज्यादा है?	हाँ 2500मी0	हाँ 2600मी0	हाँ 1800मी0	हाँ 1700मी0
2.	क्या परियोजना स्थल No Mining Zone अंतर्गत आता है?	No Mining Zone data with DMO			
3.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई नेशलन पार्क है?	—	—	—	—
4.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई अभ्यारण्य एवं जैव विविधता क्षेत्र है?	—	—	—	—
5.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई इको सेंसिटिव जोन (Eco Sensitive Zone) है?	—	—	—	—
6.	क्या आवेदित परियोजना ESZ के अन्तर्गत प्रबंधित श्रेणी में आता है अथवा नहीं?	—	—	—	—

The information required in serial no. 1 and 2 of above format will be certified by the territorial DFOs and rest information (Sl. No - 3 to 6) of above Format will be certified by the Wild Life DFOs.

Approved

Divisional Forest Officer
Dhanbad

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विहित प्रपत्र

iv. Revised format for project proposal to get the following information / certification from Divisional Forest Officer concerned :-

प	निर्धारित बिन्दु	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं
	2	3	4	5	6	7	8	9	10
	Details of potential mining lease :- UIN- **JM16** River Details :- **Jamuniya River Category-II** Lease Details :- **Mouza- Hariharpur, Block-Topchanchi,Thana No.- 0014, District-Dhanbad, Plot No.- 5304(P), Toposheet No.- 73/1 Geo-Coordinate** →	**23° 53' 17.24" N 86° 7' 3.56" E**	**23° 53' 18.99" N 86° 7' 2.77" E**	**23° 53' 20.06" N 86° 7' 8.99" E**	**23° 53' 12.04" N 86° 7' 11.68" E**	**23° 53' 6.74" N 86° 7' 5.91" E**	**23° 53' 8.24" N 86° 7' 4.94" E**	**23° 53' 12.34" N 86° 7' 9.46" E**	**23° 53' 17.76" N 86° 7' 6.83" E**
	क्या परियोजना स्थल से आरक्षित वन / संरक्षित वन भूमि से दूरी 250 मी0 से ज्यादा है?	हाँ 2600मी0	हाँ 2500मी0	हाँ 2200मी0	हाँ 2000मी0	हाँ 2000मी0	हाँ 2550मी0	हाँ 2400मी0	हाँ 2500मी0
	क्या परियोजना स्थल No Mining Zone अंतर्गत आता है?	No Mining Zone data with DMO							
	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई नेशलन पार्क है?	—	—	—	—	—	—	—	—
	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई अभ्यारण्य एवं जैव विविधता क्षेत्र है?	—	—	—	—	—	—	—	—
5.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई इको सेंसिटिव जोन (Eco Sensitive Zone) है?	—	—	—	—	—	—	—	—
6.	क्या आवेदित परियोजना ESZ के अन्तर्गत प्रबंधित श्रेणी में आता है अथवा नहीं?	—	—	—	—	—	—	—	—

The information required in serial no. 1 and 2 of above format will be certified by the territorial DFOs and rest information (Sl. No. - 3 to 6) of above Format will be certified by the Wild Life DFOs.

Divisional Forest Officer
Dhanbad

State Level Environment Impact Assessment Authority ★ Jharkhand, Ranchi ★ Approved

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विहित प्रपत्र

iv. Revised format for project proposal to get the following information / certification from Divisional Forest Officer concerned :-

क्रम सं0	निर्धारित बिन्दु	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं	हाँ / नहीं
1	2	3	4	5	6
	Details of potential mining lease :- UIN- **BR17** River Details :- **Barakar River Category-II** Lease Details :- **Mouza- PANRUA, Block- Tundi, Thana No.- 0275, Plot No.- 2455(P), District- Dhanbad** **Geo-Coordinate** ⟶	**23° 55' 54.14" N 86° 38' 50.27" E**	**23° 55' 55.70" N 86° 38' 52.86" E**	**23° 55' 44.91" N 86° 39' 0.83" E**	**23° 55' 43.96" N 86° 38' 59.46" E**
1.	क्या परियोजना स्थल से आरक्षित वन / संरक्षित वन भूमि से दूरी 250 मी0 से ज्यादा है?	नहीं 20मी0	नहीं 100मी0	हाँ 350मी0	हाँ 340मी0
2.	क्या परियोजना स्थल No Mining Zone अंतर्गत आता है?	No Mining Zone data with DMO			
3.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई नेशलन पार्क है?	—	—	—	—
4.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई अभ्यारण्य एवं जैव विविधता क्षेत्र है?	—	—	—	—
5.	क्या परियोजना स्थल से 10 किलो मीटर की दूरी के अंदर कोई इको सेंसिटिव जोन (Eco Sensitive Zone) है?	—	—	—	—
6.	क्या आवेदित परियोजना ESZ के अन्तर्गत प्रबंधित श्रेणी में आता है अथवा नहीं?	—	—	—	—

The information required in serial no. 1 and 2 of above format will be certified by the territorial DFOs and rest information (Sl. No. - ~~3 to 6~~) of above Format will be certified by the Wild Life DFOs.

Approved
Jharkhand, Ranchi ★ State Level Environment Impact Assessment Authority ★

Divisional Forest Officer
Dhanbad

Department of Forest, Environment and Climate Change

Report of Distance from Notified Forest, National Park, Sanctuary & Eco-Sensitive Zone

Name Of Applicant TATA STEEL LIMITED DIVISION
Institution Type
Email ID sanghamitra.mishra@tatasteel.com **Contact no.:** 9040068241
Location of Proposed Land

District Dhanbad **Battery Point** Dungri Puttia
Thana No.: 110 Thana Name: Jorapokhar
Khata No.: 126 Khesra Name: Plot N0.1 (Dungri Mouza) plot No.2714 Part Area (Puttia Mouza)

#	Checkpoint	Range Forest Officer	Divisional Forest Officer
1	Whether Distance of Project location from Reserved Forest/Protected Forest is 250 m? *	Yes	Yes 270 mtr
2	Whether Project location come under No Mining Zone? *	No	No
3	Does there any National park located within 10 km from project location? *	No	No
4	Does there any Wildlife sanctuary located within 10 km distance from project location? *	No	No
5	Does there any ESZ available within 10 km distance from project location? *	No	No
6	Whether Proposed project comes under prohibited category of ESZ (Yes or No)? *	No	No

Division **DFO Dhanbad**
Letter No. 2201
Date of issue 18/11/2020
Signature Bhabna
Name 18-11-2020

Divisional Forest Officer

Divisional Forest Officer
Dhanbad

State Level Environment Impact Assessment Authority ★ Jharkhand, Ranchi ★
Approved

DR-9

Department of Forest, Environment and Climate Change

Report of Distance from Notified Forest, National Park, Sanctuary & Eco-Sensitive Zone

Name Of Applicant	TATA STEEL LIMITED DIVISION		
Institution Type			
Email ID	sanghamitra.mishra@tatasteel.com	**Contact no.:**	9040068241

Location of Proposed Land

District	Dhanbad	**Battery Point**	TetangabadSandLease
Thana No.:	78	Thana Name:	Bada Putki
Khata No.:	15	Khesra Name:	253

#	Checkpoint	Range Forest Officer	Divisional Forest Officer
1	Whether Distance of Project location from Reserved Forest/Protected Forest is 250 m? *	~~No~~	~~No~~
2	Whether Project location come under No Mining Zone? *	~~No~~	~~No~~
3	Does there any National park located within 10 km from project location? *	No	No
4	Does there any Wildlife sanctuary located within 10 km distance from project location? *	No	No
5	Does there any ESZ available within 10 km distance from project location? *	No	No
6	Whether Proposed project comes under prohibited category of ESZ (Yes or No)? *	Yes	Yes

क्र0सं0–1एवं 2– में वांछित सूचना वन प्रमण्डल पदाधिकारी, धनबाद वन प्रमण्डल के कार्यालय से प्राप्त करे।

क्र0सं0–3 से 6– के संदर्भ में प्रतिवेदित करना है कि प्रस्तावित परियोजना हेतु आवेदित स्थल Battery Point (23.704861 N 86.335417 E) से निकटतम संरक्षित क्षेत्र (Protected Area) तोपचांची वन्यप्राणी आश्रयणी अवस्थित है, का वन, पर्यावरण एवं जलवायु परिवर्तन मंत्रालय भारत सरकार द्वारा पारसनाथ एवं तोपचांची वन्यप्राणी आश्रयणी के अधिसूचित ESZ के सीमा से बाहर अवस्थित है।

वन प्रमण्डल पदाधिकारी
वन्य प्राणी प्रमण्डल, हजारीबाग

Division DFO Wildlife Hazaribagh
Letter No. 1621
Date of issue
Signature
Name
Divisional Forest Officer
Wildlife Division Hazaribag
Divisional Forest Officer

State Level Environment Impact Assessment Authority * Jharkhand, Ranchi *
Approved

ANNEXURE-03

COPY OF WILD LIFE DFO

कार्यालय–वन प्रमण्डल पदाधिकारी, वन्यप्राणी प्रमण्डल, हजारीबाग

Email- dfo-wlhaz@gov.in, dfowildlifehazaribag@yahoo.in,Tel. No.-06546-223767 (O), 8987790209

पत्रांक :– 400 दिनांक :– 27.02.2023

प्रेषक,

वन प्रमण्डल पदाधिकारी,
वन्यप्राणी प्रमण्डल, हजारीबाग।

सेवा में,

सहायक निदेशक भूतत्व,
जिला भूतात्विक कार्यालय,
बोकारो।

विषय :– धनबाद जिला हेतु बालू खनिज के DSR (Draft) में प्रस्तावित Category-II के बालूघाट के बावत वन सीमा की दूरी एवं ESZ से संबंधित प्रतिवेदन उपलब्ध कराने के संबंध में।

प्रसंग :– आपका पत्रांक 49, दिनांक 23.02.2023

महाशय,

उपर्युक्त विषयक प्रसंगाधीन पत्र में धनबाद जिलान्तर्गत बालू घाट के संचालन हेतु बालूघाट DSR (Draft) प्रस्तावित स्थल (मौजा–तसरा, हेटकन्दरा, चासनाला, झाझटांड(भौंरा), पेतिया, डुगंरीघाट, डुगंरी–पतिया(झरिया), डुगंरी–पतिया(पुटकी), टेटंगाबाद, महुदा, नगदा, कुंगी, लोहपिटि, जजलपुर, डुमरकुंदा, हरिहरपुर, पनरूआ) का मानचित्र GPS Point तथा .shp/.kml प्रसांगिक पत्र के माध्यम से उपलब्ध कराया गया है।

उपरोक्त उपलब्ध कराये गये अभिलेख के अवलोकनोपरांत प्रतिवेदित करना है कि प्रस्तावित स्थल तोपचांची वन्यप्राणी आश्रयणी (Protected Area) के पारिस्थितिकी संवेदशील क्षेत्र (ESZ) से बाहर अवस्थित है।

अतः आपके सूचनार्थ एवं आवश्यक कार्रवाई हेतु प्रेषित।

विश्वासभाजन

वन प्रमण्डल पदाधिकारी,
वन्यप्राणी प्रमण्डल, हजारीबाग

State Level Environment Impact Assessment Authority ★ Jharkhand, Ranchi ★ Approved

कार्यालय–वन प्रमण्डल पदाधिकारी, वन्यप्राणी प्रमण्डल, हजारीबाग

Email- dfo-wlhaz@gov.in, dfowildlifehazaribag@yahoo.in, Tel. No.-06546-223767 (O), 8987790209

पत्रांक :- 97 दिनांक :- 19/01/2023

प्रेषक,

वन प्रमण्डल पदाधिकारी,
वन्यप्राणी प्रमण्डल, हजारीबाग।

सेवा में,

जिला खनन पदाधिकारी
धनबाद।

विषय :– Category-II बालू घाट के संचालन हेतु प्रतिवेदन उपलब्ध कराने के संबंध में।

प्रसंग :– आपका पत्रांक 81/एम0, दिनांक 12.01.2023

महाशय,

उपर्युक्त विषयक प्रसंगाधीन पत्र में धनबाद जिलान्तर्गत बालू घाट के संचालन हेतु बालूघाट के DSR (Draft) की प्रति यथा प्रस्तावित स्थल की विवरणी, GPS Point तथा .kml प्रसांगिक पत्र के माध्यम से उपलब्ध कराया गया है।

उपरोक्त उपलब्ध कराये गये अभिलेख के अवलोकनोपरांत प्रतिवेदित करना है कि प्रस्तावित स्थल तोपचांची वन्यप्राणी आश्रयणी (Protected Area) के पारिस्थितिकी संवेदशील क्षेत्र (ESZ) से बाहर अवस्थित है।

अतः आपके सूचनार्थ एवं आवश्यक कार्रवाई हेतु प्रेषित।

विश्वासभाजन

19/01/2023

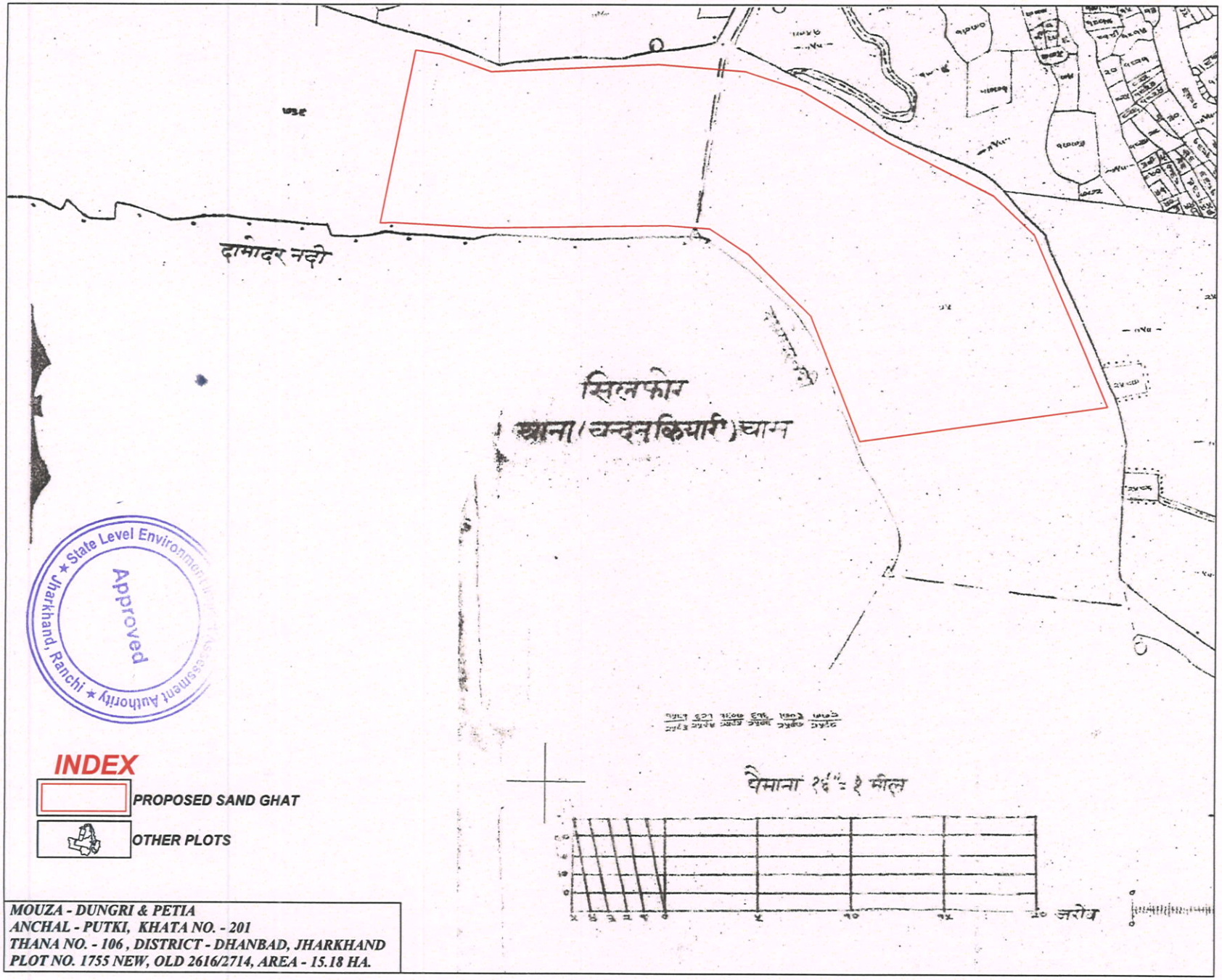
वन प्रमण्डल पदाधिकारी,
वन्यप्राणी प्रमण्डल, हजारीबाग

State Level Environment Impact Assessment Authority * Jharkhand, Ranchi * Approved

ANNEXURE-04

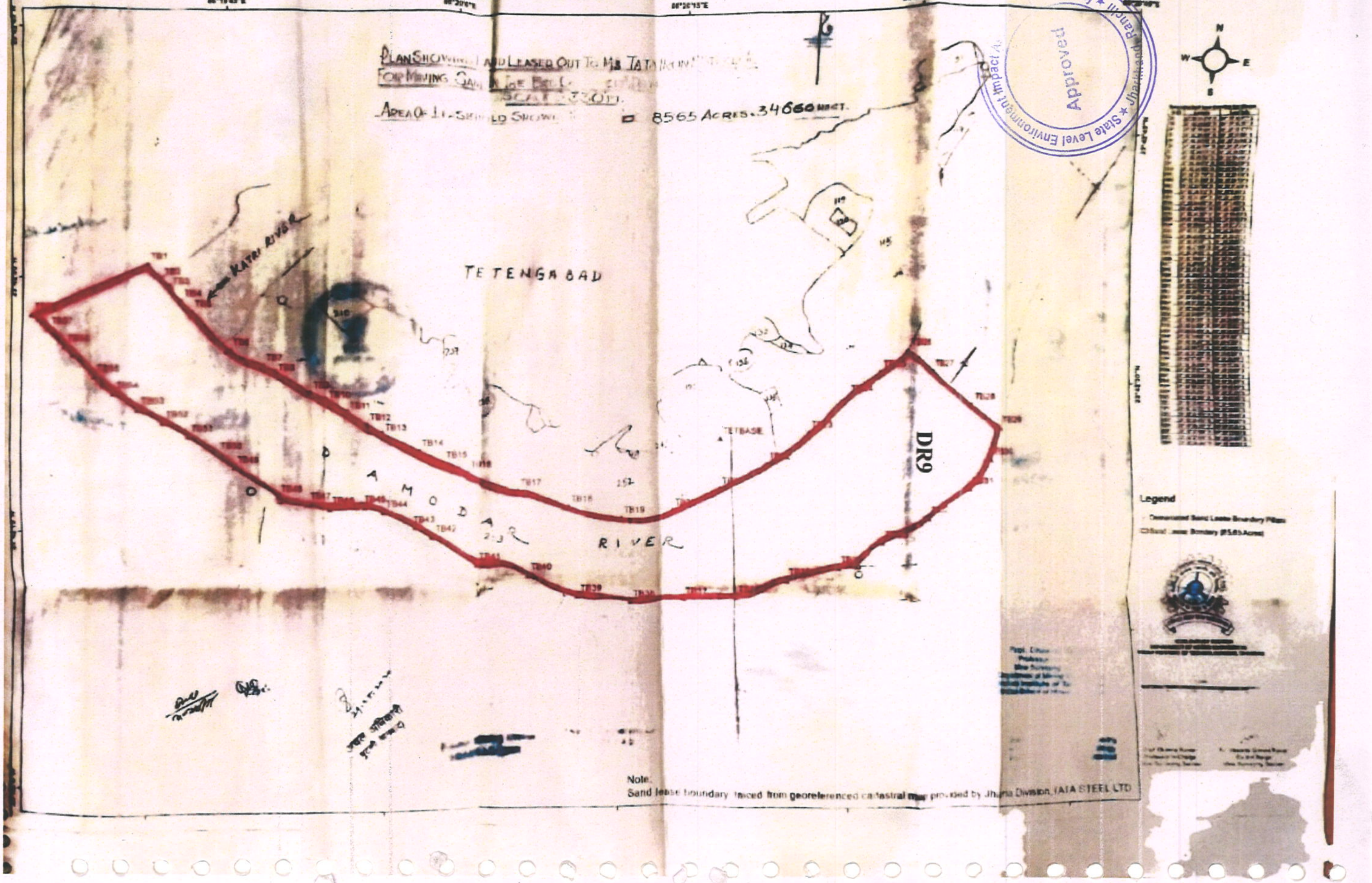
CADASTRAL MAP OF POTENTIAL AREA OF SAND

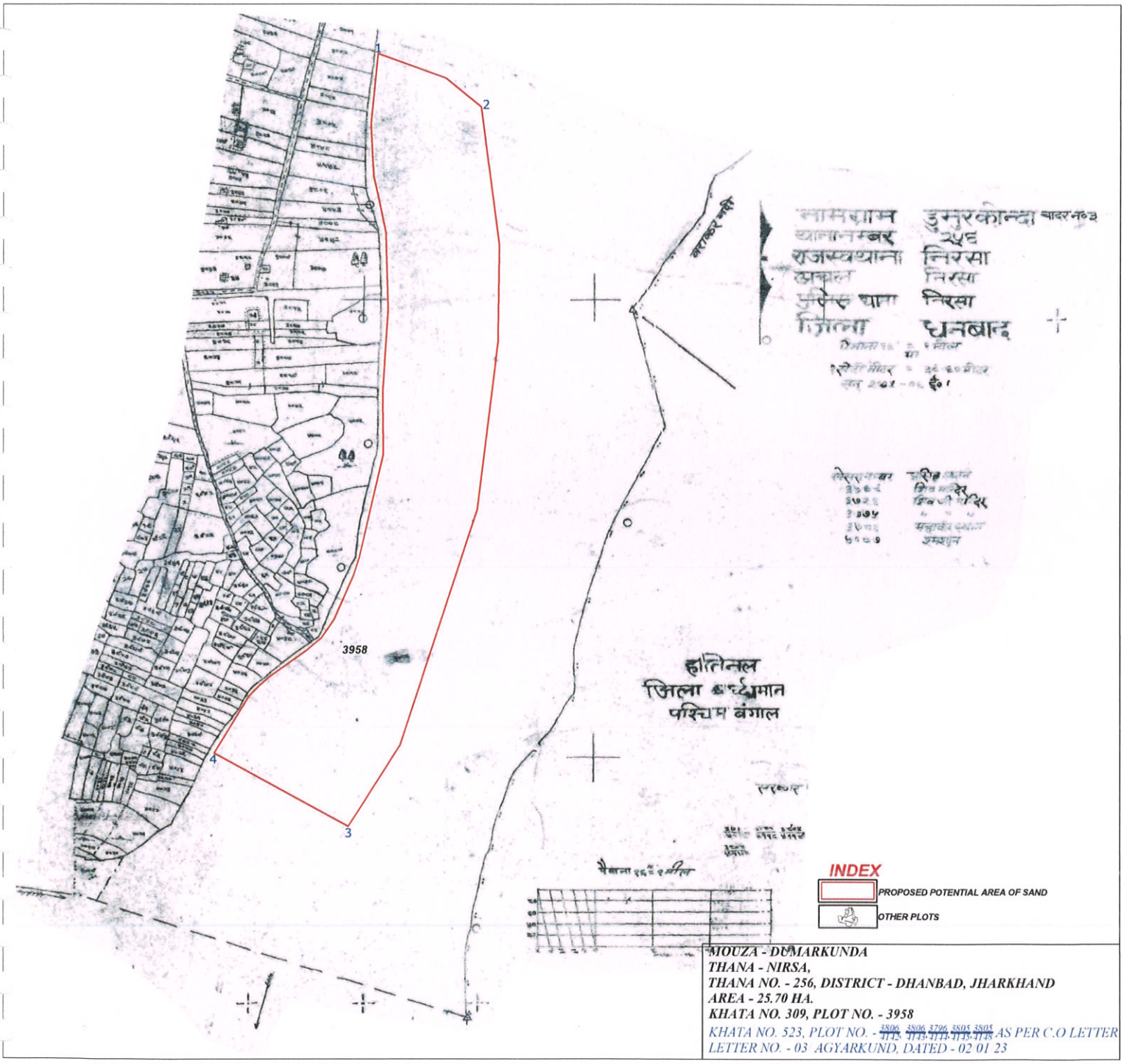
State Level Environment Impact Assessment Authority
Approved
Jharkhand, Ranchi



MOUZA - DUNGRI & PETIA
ANCHAL - PUTKI, KHATA NO. - 201
THANA NO. - 106 , DISTRICT - DHANBAD, JHARKHAND
PLOT NO. 1755 NEW, OLD 2616/2714, AREA - 15.18 HA.

Georeferenced Cadastral plan of Teetangabad Sand Lease
TATA STEEL LTD.





MOUZA - DUMARKUNDA
THANA - NIRSA,
THANA NO. - 256, DISTRICT - DHANBAD, JHARKHAND
AREA - 25.70 HA.
KHATA NO. 309, PLOT NO. - 3958
KHATA NO. 523, PLOT NO. - 3806, 3806, 3796, 3805, 3805 AS PER C.O LETTER
LETTER NO. - 03 AGYARKUND, DATED - 02 01 23

State Level Environment Impact Assessment Authority
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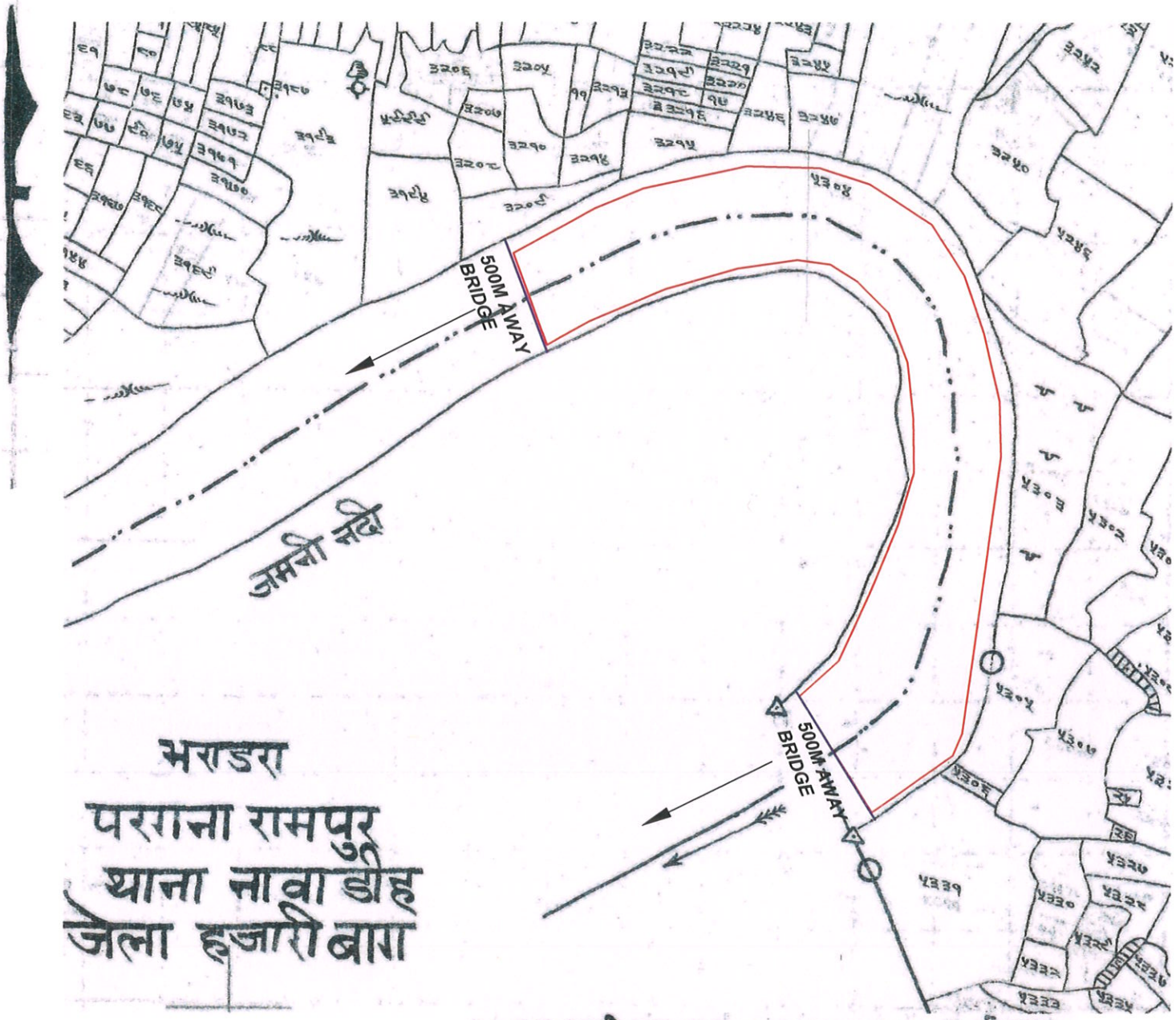
Jharkhand, Ranchi



नकशा का स्केल- एकमाइल वराबर १६ ईन्च
सन १९६५-६६ ईस्वी

0 100 200 300 400 Metres
0 5 10 15 20 Quntrsenains

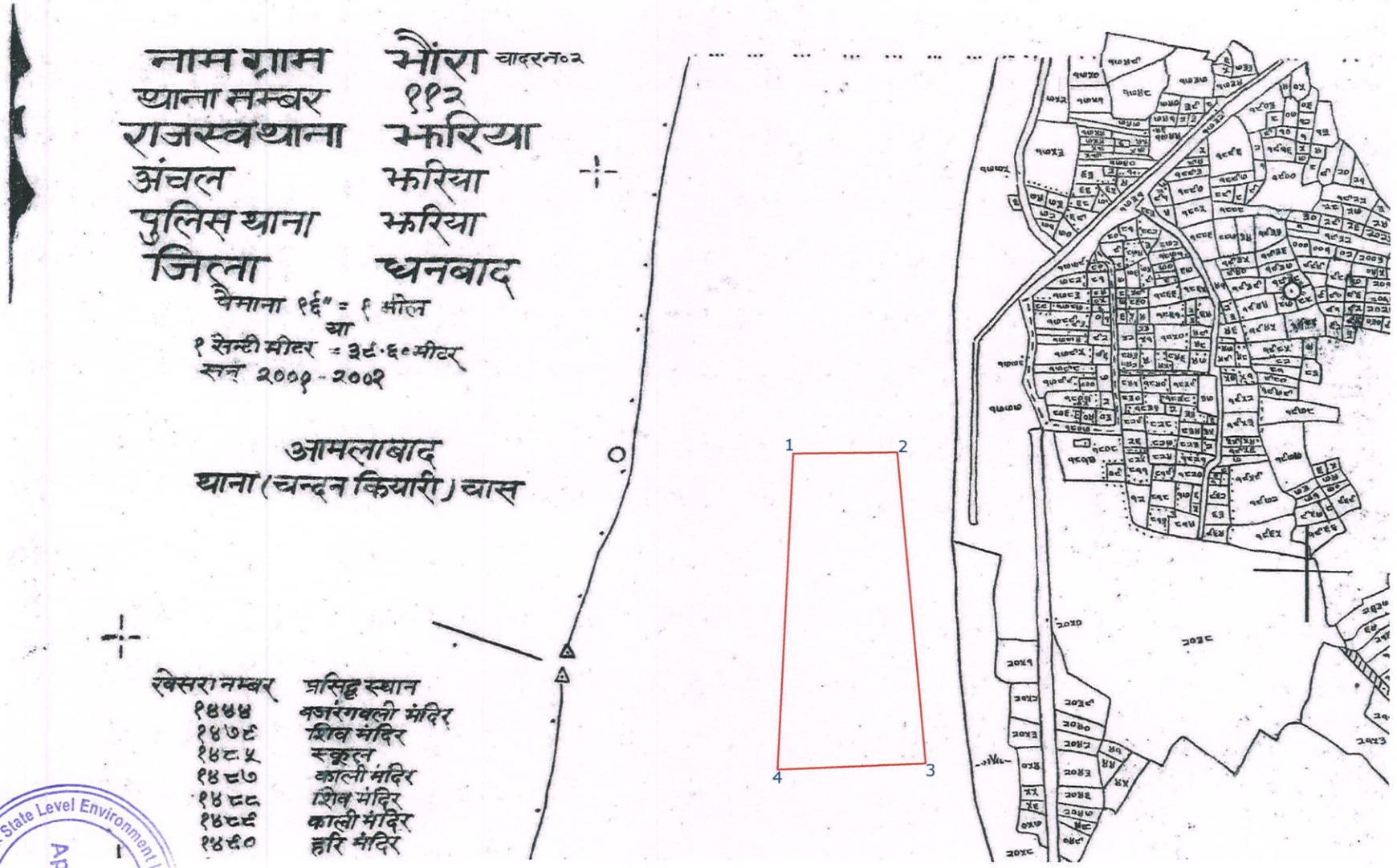
Approved
State Level Environment Impact Assessment Authority
Jharkhand, Ranchi

INDEX

PROPOSED SAND GHAT

OTHER PLOTS

MOUZA - HARIHARPUR
THANA - TOPCHANCHI,
THANA NO. - 0014, DISTRICT - DHANBAD, JHARKHAND
PLOT NO. 5304(P) , AREA - 4.13 HA.



Approved
Jharkhand, Ranchi ★ State Level Environment Impact Assessment Authority ★

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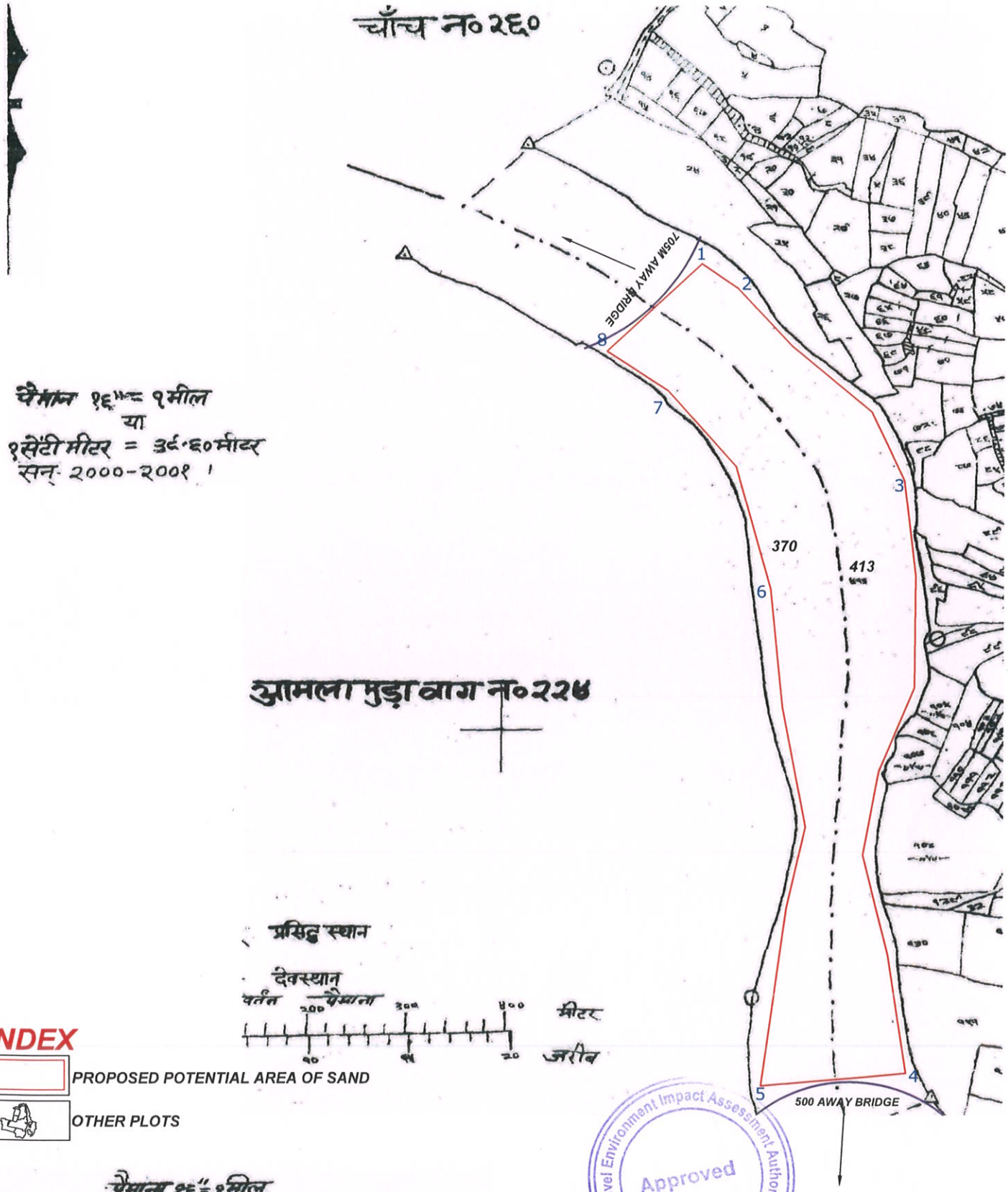
PROPOSED POTENTIAL AREA OF SAND

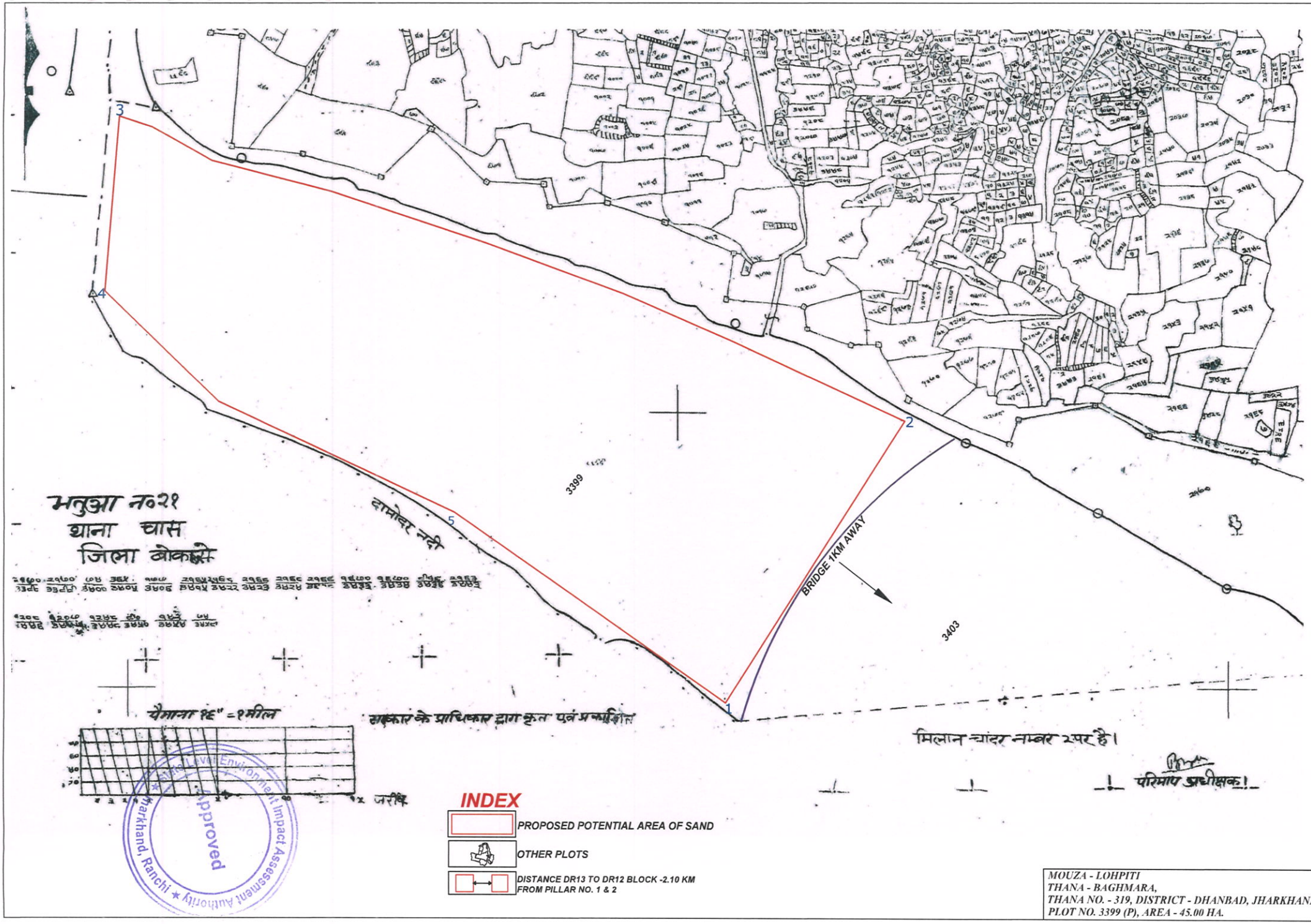
OTHER PLOTS

DISTANCE DR4 TO DR5 BLOCK -0.73KM
FROM PILLAR NO. 1 & 2

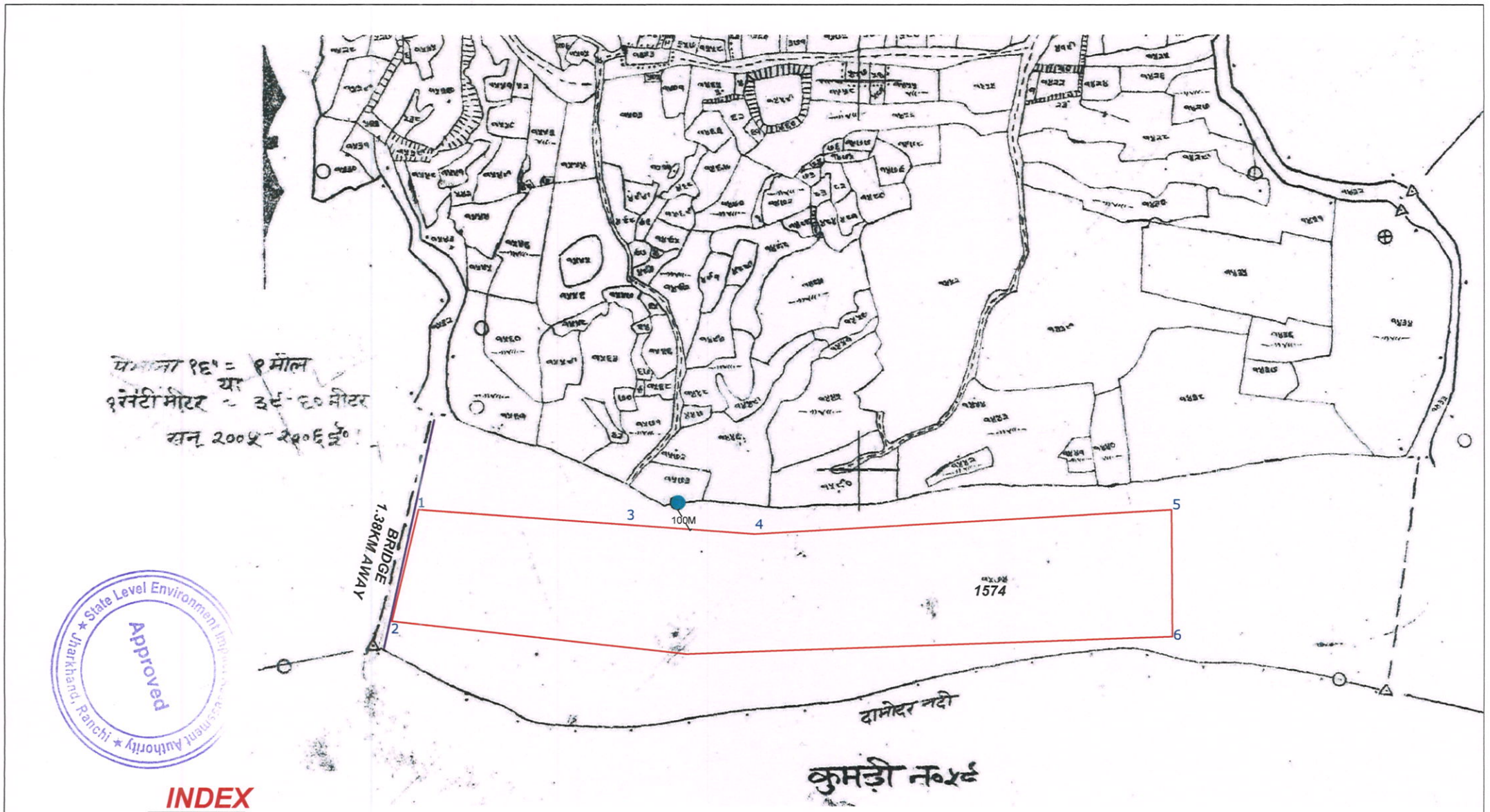
MOUZA - JAHAJTAND (BHOWRA)
THANA - JHARIYA,
THANA NO. - 112, DISTRICT - DHANBAD, JHARKHAND
PLOT NO. 2752 (P), KHATA NO. - 186, AREA - 2.84 HA.



MOUZA - JAJALPUR
THANA - NIRSA, ANCHAL - KELIYASOL
THANA NO. - 261, DISTRICT - DHANBAD, JHARKHAND
PLOT NO. 370(P) & 413(P) (AS PER C.O. - KHATA NO. 77, PLOT NO. - 108/413), AREA - 9.81 HA.



MOUZA - LOHPITI
THANA - BAGHMARA,
THANA NO. - 319, DISTRICT - DHANBAD, JHARKHAND
PLOT NO. 3399 (P), AREA - 45.00 HA.



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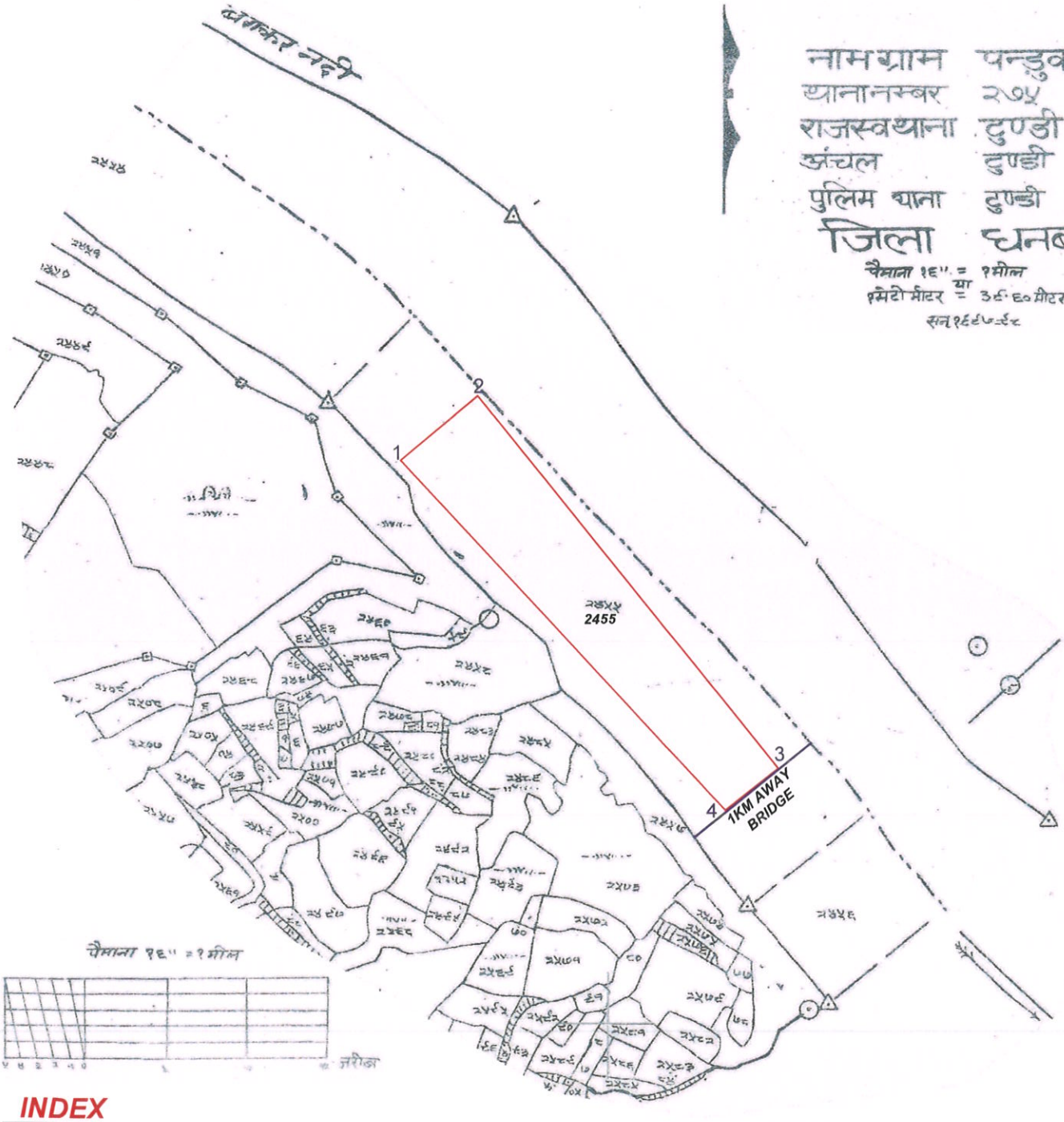
- PROPOSED POTENTIAL AREA OF SAND
- OTHER PLOTS
- WATER INTAKE

MOUZA - NAGDA
THANA - BAGHMARA,
THANA NO. - 327, DISTRICT - DHANBAD, JHARKHAND
PLOT NO. 1574 (P), AREA - 9.87 HA.



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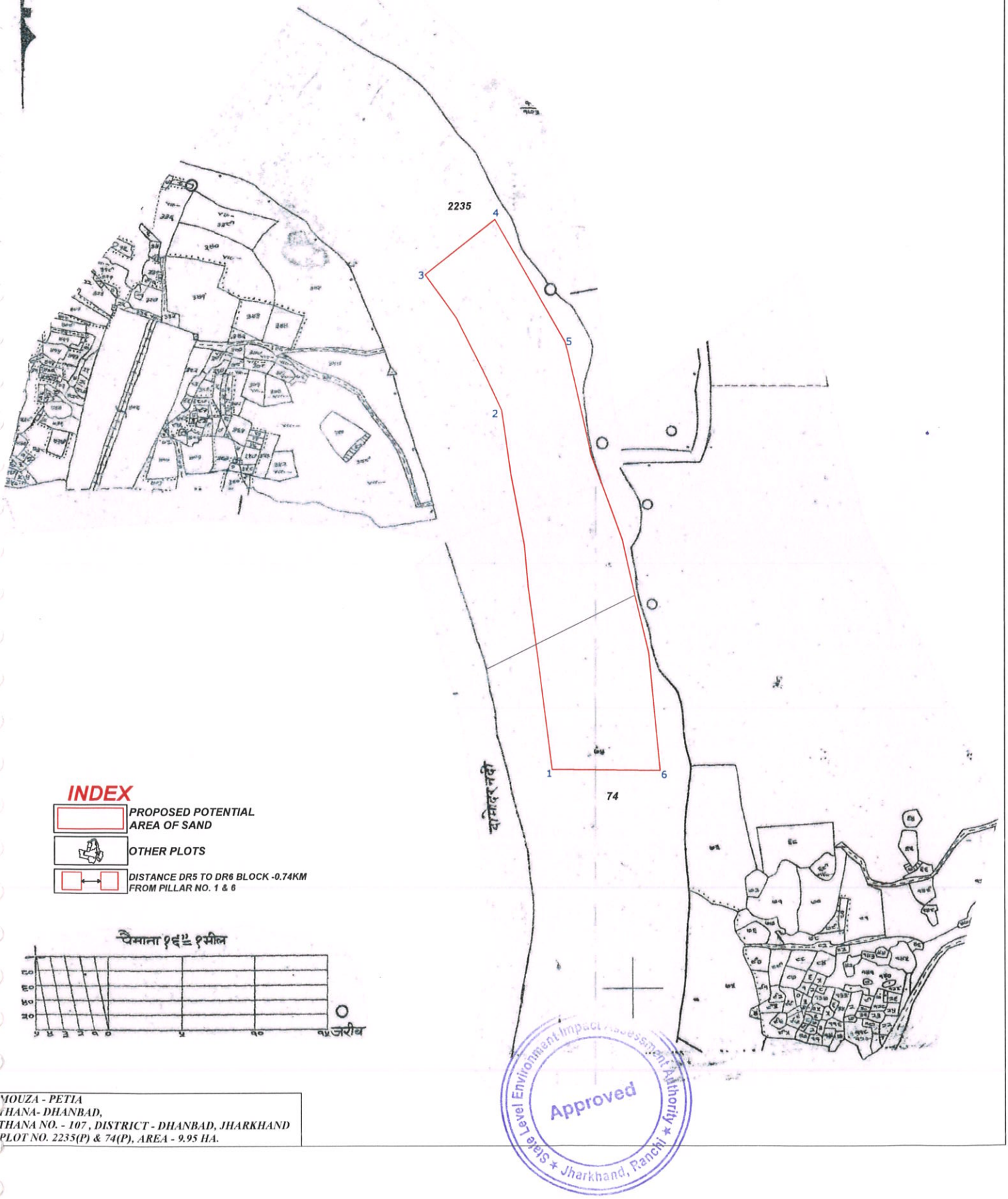
PROPOSED POTENTIAL AREA OF SAND

OTHER PLOTS

MOUZA - PANRUA
THANA - TUNDI,
THANA NO. - 275, DISTRICT - DHANBAD, JHARKHAND
PLOT NO. 2455(P) , AREA - 2.74 HA.

State Level Environment Impact Assessment Authority
Approved
Jharkhand, Ranchi

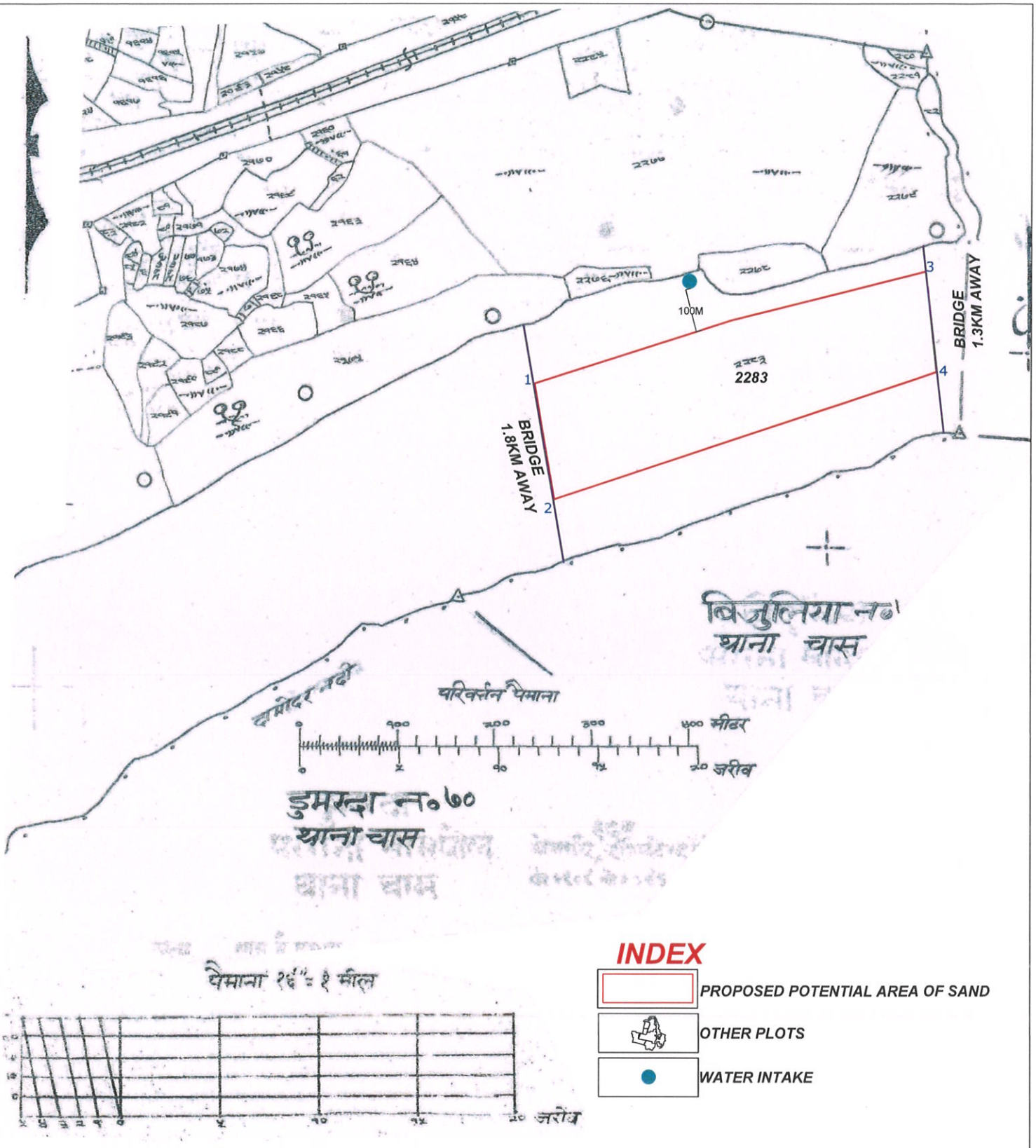


INDEX

- PROPOSED POTENTIAL AREA OF SAND
- OTHER PLOTS
- DISTANCE DR5 TO DR6 BLOCK -0.74KM FROM PILLAR NO. 1 & 6

State Level Environment Impact Assessment Authority ★ Jharkhand, Ranchi ★
Approved

MOUZA - PETIA
THANA- DHANBAD,
THANA NO. - 107 , DISTRICT - DHANBAD, JHARKHAND
PLOT NO. 2235(P) & 74(P), AREA - 9.95 HA.

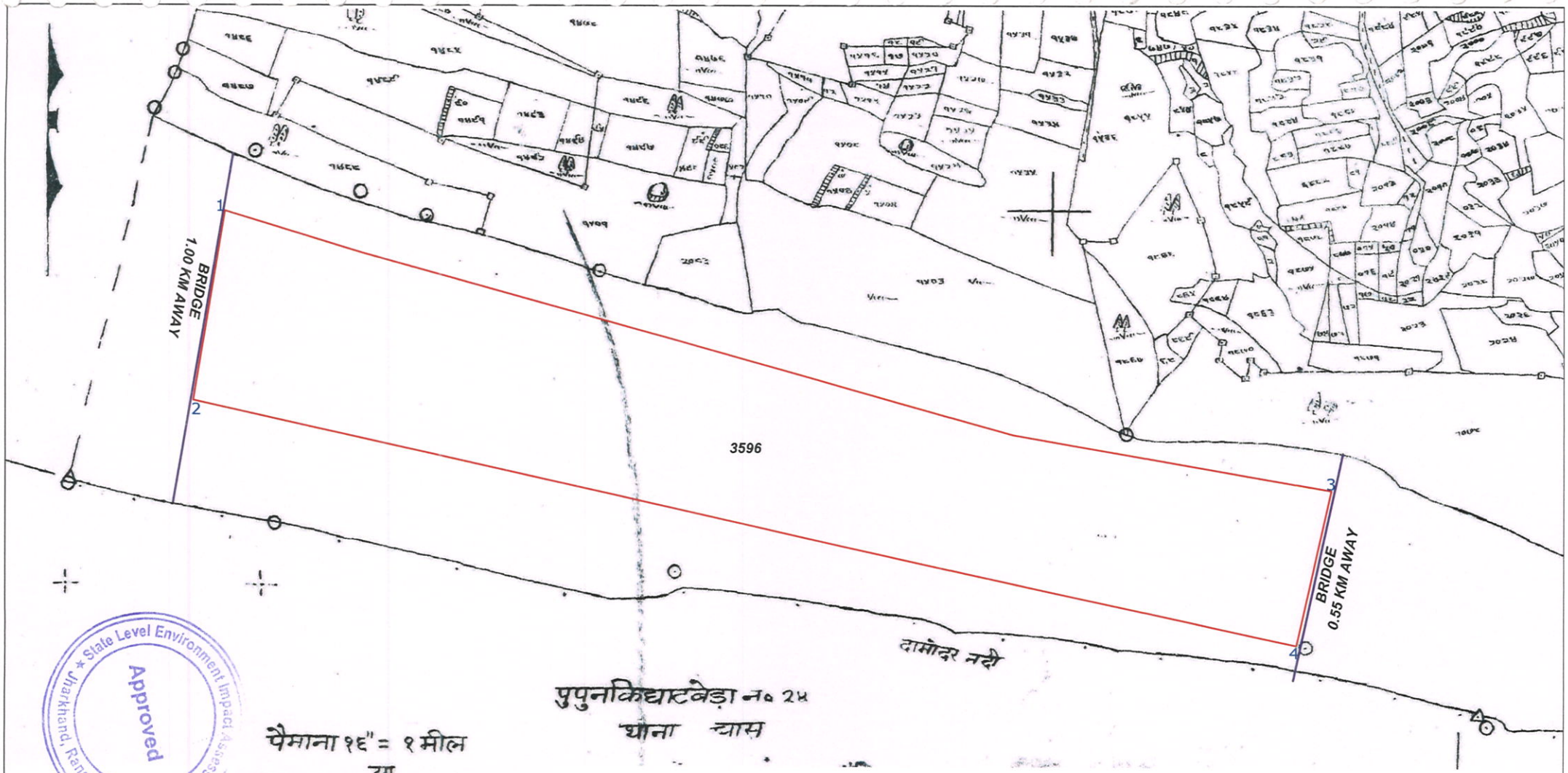


INDEX

- PROPOSED POTENTIAL AREA OF SAND
- OTHER PLOTS
- WATER INTAKE

MOUZA - SINGRA
THANA - BAGHMARA,
THANA NO. - 347, DISTRICT - DHANBAD, JHARKHAND
PLOT NO. 2283 (P) OR 6158(P), AREA - 4.52 HA.

State Level Environment Approved Authority * Jharkhand, Ranchi *



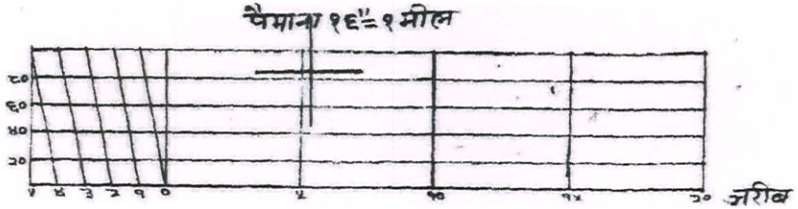
State Level Environment Impact Assessment Authority ★ Jharkhand, Ranchi ★
Approved

INDEX

PROPOSED POTENTIAL AREA OF SAND

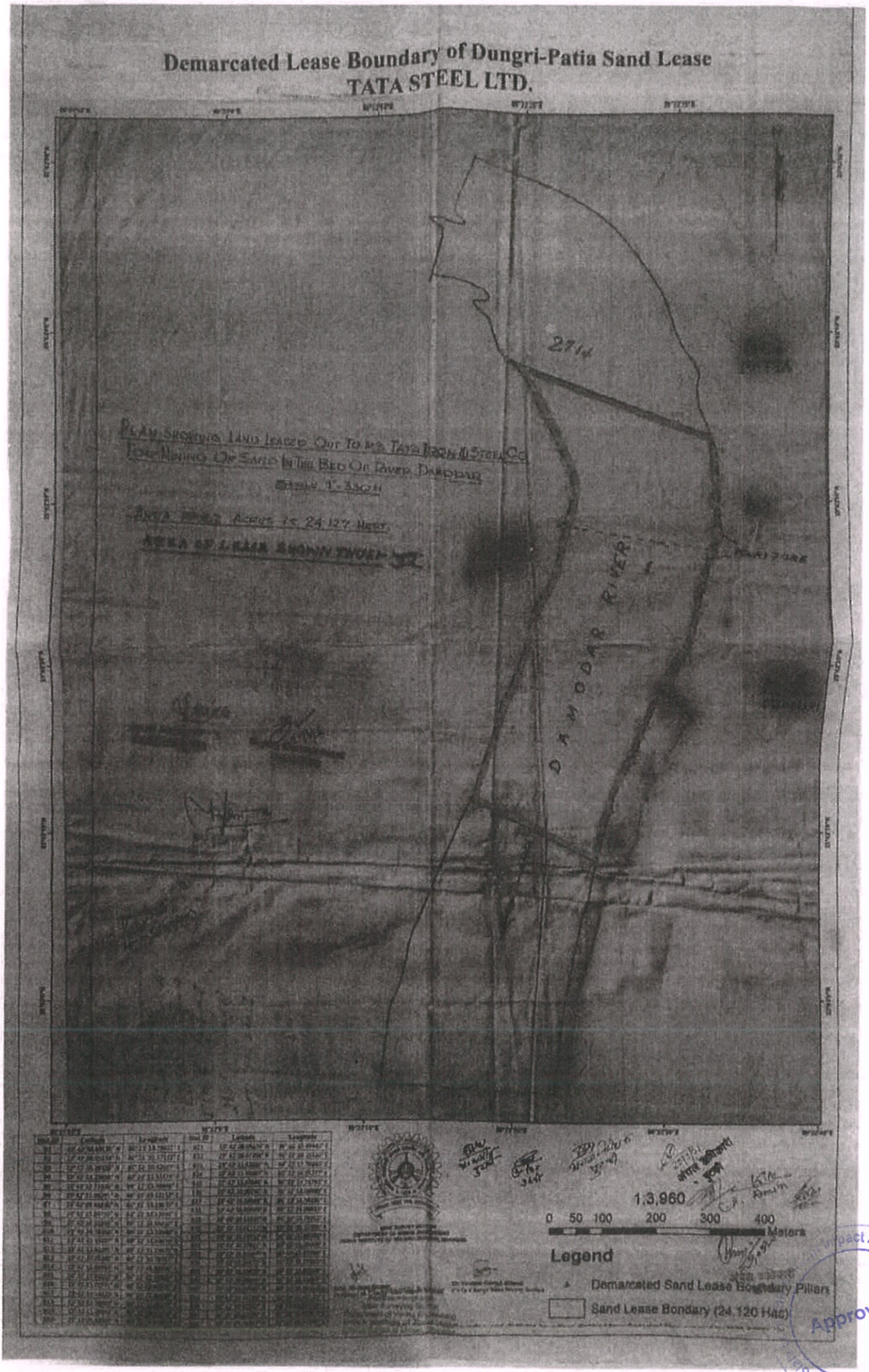
OTHER PLOTS

DISTANCE DR12 TO DR13 BLOCK -2.10 KM
FROM PILLAR NO. 1 & 2



MOUZA - TELMOCHO
THANA - BAGHMARA,
THANA NO. - 321, DISTRICT - DHANBAD, JHARKHAND
PLOT NO. 3596 (P), AREA - 20.00 HA.

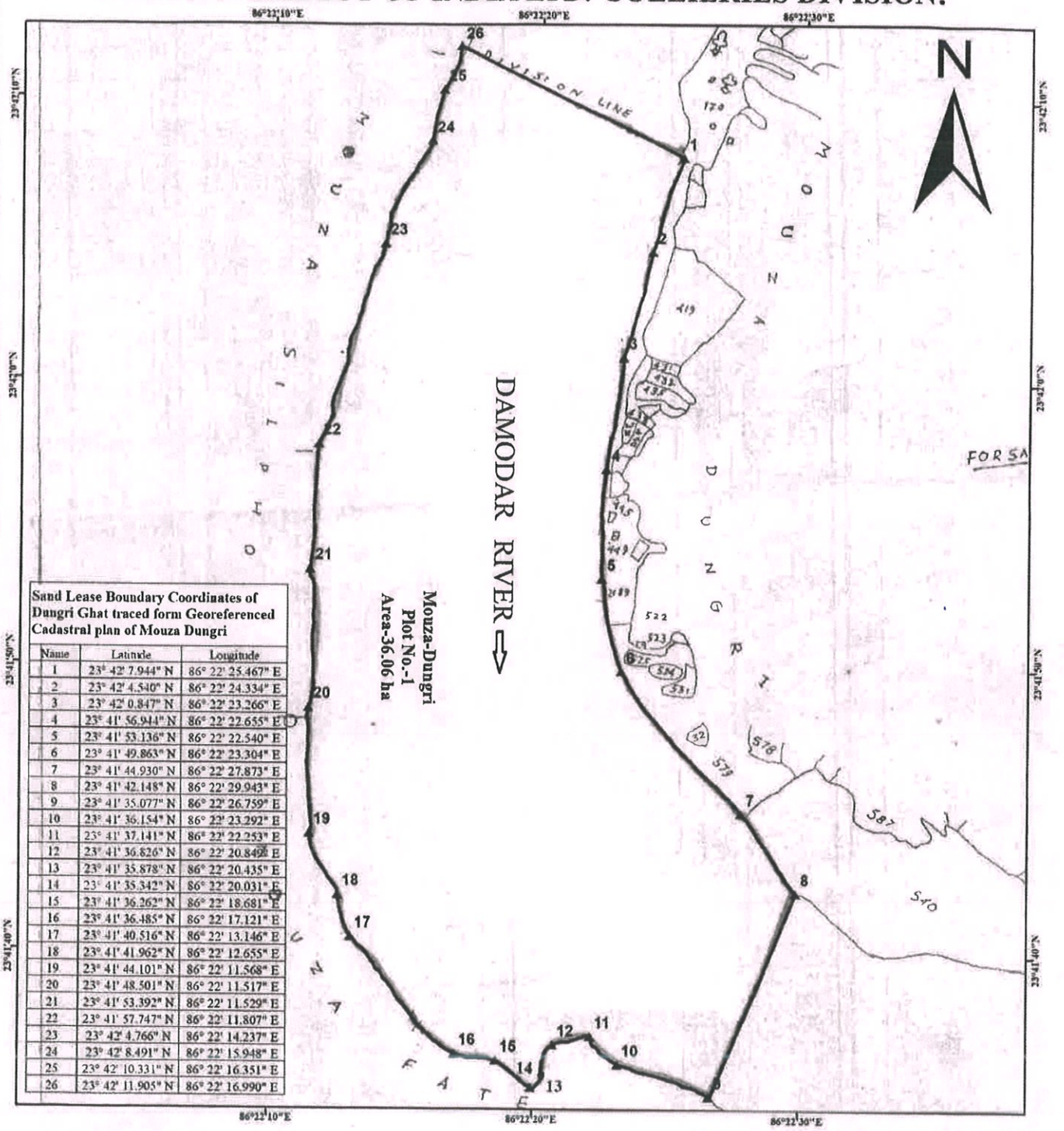
Demarcated Lease Boundary of Dungri-Patia Sand Lease
TATA STEEL LTD.



Approved
Jharkhand, Ranchi

Scanned with CamScanner

GEOREFERENCED CADASTRAL PLAN OF DUNGRI GHAT SAND LEASE
CIRCLE JHARIA, DIST-DHANBAD (JHARKHAND)
STEEL AUTHORITY OF INDIA LTD.-COLLIERIES DIVISION.



Sand Lease Boundary Coordinates of Dungri Ghat traced form Georeferenced Cadastral plan of Mouza Dungri

Name	Latitude	Longitude
1	23° 42' 7.944" N	86° 22' 25.467" E
2	23° 42' 4.540" N	86° 22' 24.334" E
3	23° 42' 0.847" N	86° 22' 23.266" E
4	23° 41' 56.944" N	86° 22' 22.655" E
5	23° 41' 53.136" N	86° 22' 22.540" E
6	23° 41' 49.863" N	86° 22' 23.304" E
7	23° 41' 44.930" N	86° 22' 27.873" E
8	23° 41' 42.148" N	86° 22' 29.943" E
9	23° 41' 35.077" N	86° 22' 26.759" E
10	23° 41' 36.154" N	86° 22' 23.292" E
11	23° 41' 37.141" N	86° 22' 22.253" E
12	23° 41' 36.826" N	86° 22' 20.849" E
13	23° 41' 35.878" N	86° 22' 20.435" E
14	23° 41' 35.342" N	86° 22' 20.031" E
15	23° 41' 36.262" N	86° 22' 18.681" E
16	23° 41' 36.485" N	86° 22' 17.121" E
17	23° 41' 40.516" N	86° 22' 13.146" E
18	23° 41' 41.962" N	86° 22' 12.655" E
19	23° 41' 44.101" N	86° 22' 11.568" E
20	23° 41' 48.501" N	86° 22' 11.517" E
21	23° 41' 53.392" N	86° 22' 11.529" E
22	23° 41' 57.747" N	86° 22' 11.807" E
23	23° 42' 4.766" N	86° 22' 14.237" E
24	23° 42' 8.491" N	86° 22' 15.948" E
25	23° 42' 10.331" N	86° 22' 16.351" E
26	23° 42' 11.905" N	86° 22' 16.990" E

GEOREFERENCED CADASTRAL PLAN OF DUNGRI GHAT SAND LEASE
CIRCLE JHARIA,DIST.-DHANBAD (JHARKHAND)
STEEL AUTHORITY OF INDIA LTD.-COLLIERIES DIVISION.

MINE SURVEYING SECTION
DEPARTMENT OF MINING ENGINEERING
IIT (ISM) DHANBAD - 826004

PLAN NO:-IIT(ISM)/SAIL/DUNGRI GHAT SAND LEASE/17-18/01

Legend

Dungri Ghat Sand Lease Area (36.06Ha)

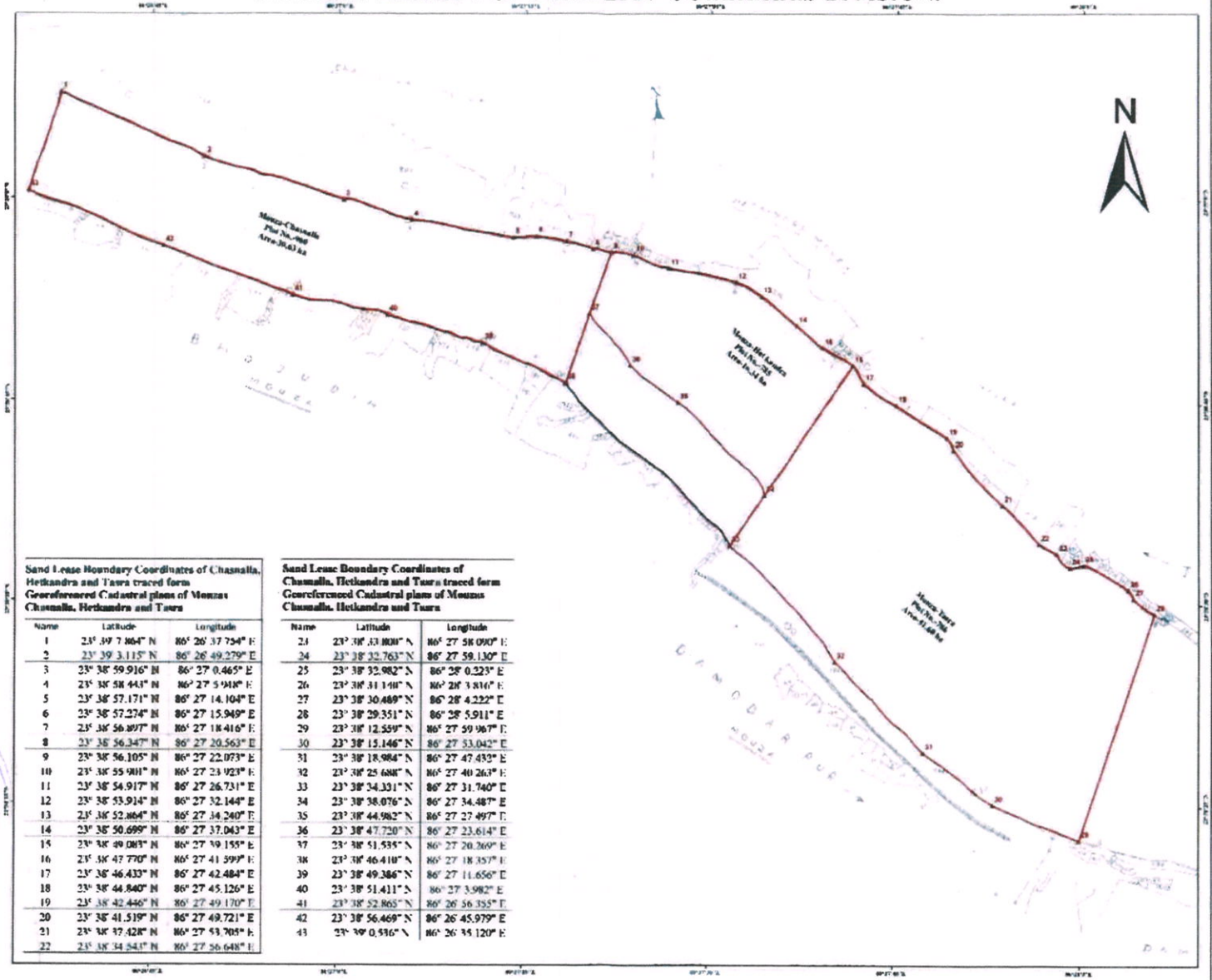
1:3,960

0 25 50 100 150 200 Meters

Note: Sand Lease Boundary have been digitized from Cadastral Plan suppled by STEEL AUTHORITY OF INDIA Ltd.

Approved
State Level Environment Impact Assessment Authority
Jharkhand, Ranchi

GEOREFERENCED CADASTRAL PLAN OF CHASNALLA, HETKANDRA AND TASRA GHAT SAND LEASE
CIRCLE JHARIA, DIST-DHANBAD (JHARKHAND)
STEEL AUTHORITY OF INDIA LTD.- COLLIERIES DIVISION.



Sand Lease Boundary Coordinates of Chasnalla, Hetkandra and Tasra traced form Georeferenced Cadastral plans of Mouzas Chasnalla, Hetkandra and Tasra

Name	Latitude	Longitude
1	23° 39' 7.864" N	86° 26' 37.754" E
2	23° 39' 3.115" N	86° 26' 49.279" E
3	23° 38' 59.916" N	86° 27' 0.465" E
4	23° 38' 58.443" N	86° 27' 5.938" E
5	23° 38' 57.171" N	86° 27' 14.104" E
6	23° 38' 57.274" N	86° 27' 15.949" E
7	23° 38' 56.897" N	86° 27' 18.416" E
8	23° 38' 56.347" N	86° 27' 20.563" E
9	23° 38' 56.105" N	86° 27' 22.073" E
10	23° 38' 55.901" N	86° 27' 23.923" E
11	23° 38' 54.917" N	86° 27' 26.731" E
12	23° 38' 53.914" N	86° 27' 32.144" E
13	23° 38' 52.864" N	86° 27' 34.240" E
14	23° 38' 50.699" N	86° 27' 37.043" E
15	23° 38' 49.083" N	86° 27' 39.155" E
16	23° 38' 47.770" N	86° 27' 41.599" E
17	23° 38' 46.433" N	86° 27' 42.484" E
18	23° 38' 44.840" N	86° 27' 45.126" E
19	23° 38' 42.446" N	86° 27' 49.170" E
20	23° 38' 41.519" N	86° 27' 49.721" E
21	23° 38' 37.428" N	86° 27' 53.705" E
22	23° 38' 34.541" N	86° 27' 56.648" E

Sand Lease Boundary Coordinates of Chasnalla, Hetkandra and Tasra traced form Georeferenced Cadastral plans of Mouzas Chasnalla, Hetkandra and Tasra

Name	Latitude	Longitude
23	23° 38' 33.808" N	86° 27' 58.090" E
24	23° 38' 32.763" N	86° 27' 59.130" E
25	23° 38' 32.982" N	86° 28' 0.223" E
26	23° 38' 31.140" N	86° 28' 3.816" E
27	23° 38' 30.489" N	86° 28' 4.222" E
28	23° 38' 29.351" N	86° 28' 5.911" E
29	23° 38' 12.559" N	86° 27' 59.967" E
30	23° 38' 15.146" N	86° 27' 53.042" E
31	23° 38' 18.984" N	86° 27' 47.432" E
32	23° 38' 25.688" N	86° 27' 40.263" E
33	23° 38' 34.331" N	86° 27' 31.740" E
34	23° 38' 38.076" N	86° 27' 34.487" E
35	23° 38' 44.982" N	86° 27' 27.497" E
36	23° 38' 47.720" N	86° 27' 23.614" E
37	23° 38' 51.535" N	86° 27' 20.269" E
38	23° 38' 46.410" N	86° 27' 18.357" E
39	23° 38' 49.386" N	86° 27' 11.656" E
40	23° 38' 51.411" N	86° 27' 3.982" E
41	23° 38' 52.865" N	86° 26' 56.355" E
42	23° 38' 56.469" N	86° 26' 45.979" E
43	23° 39' 0.936" N	86° 26' 35.120" E

State Level Environment Impact Assessment Authority ★ Jharkhand, Ranchi ★
Approved

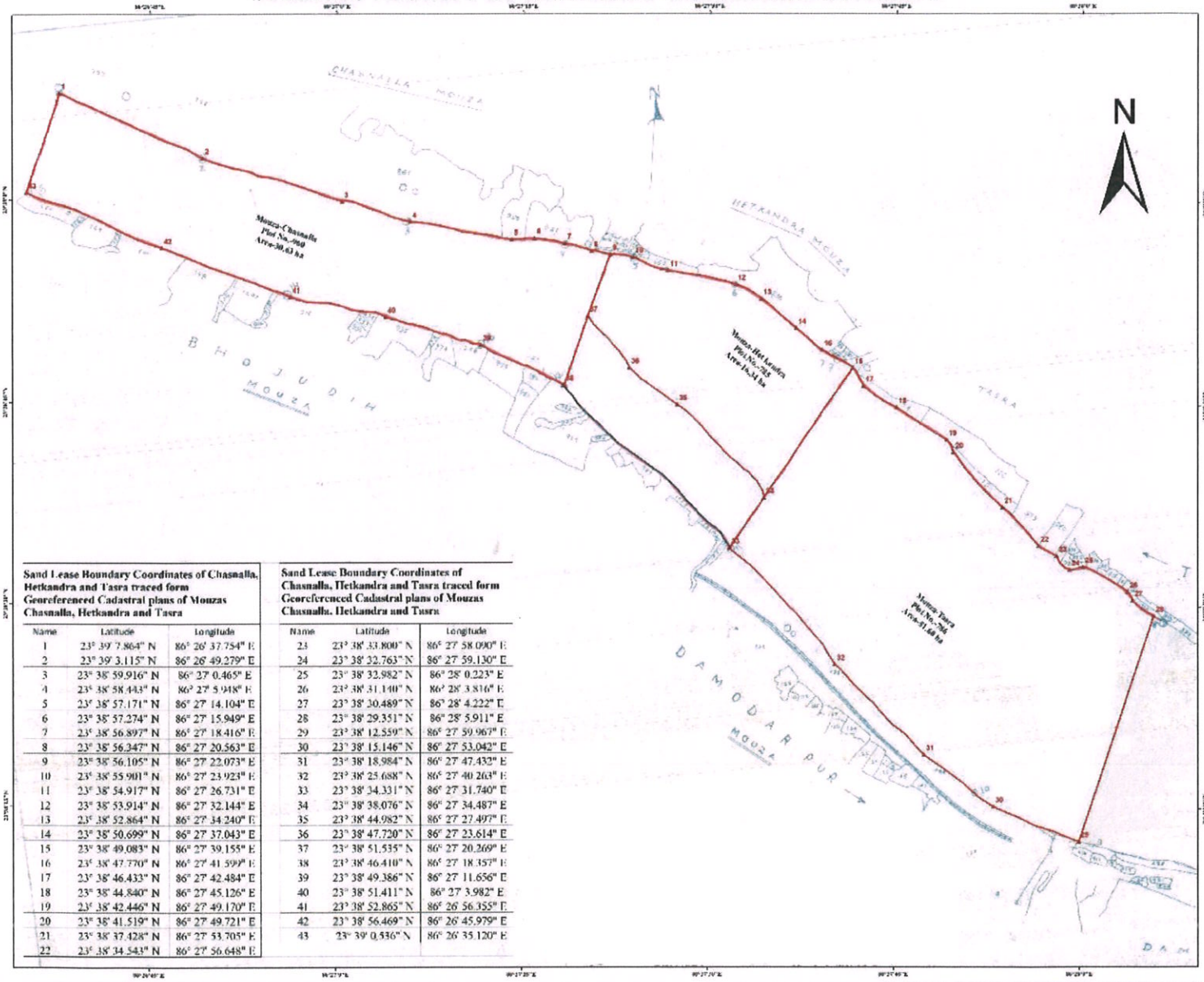
Legend

- Chasnalla Ghat Sand Lease Area (30.63 Ha)
- Hetkandra Ghat Sand Lease Area (16.34 Ha)
- Tasra Ghat Sand Lease Area (51.60 Ha)

1:3,960

0 40 80 160 240 320 Meters

GEOREFERENCED CADASTRAL PLAN OF CHASNALLA, HETKANDRA AND TASRA GHAT SAND LEASE CIRCLE JHARIA, DIST-DHANBAD (JHARKHAND) STEEL AUTHORITY OF INDIA LTD.- COLLIERIES DIVISION.



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Legend

- Chasnalla Ghat Sand Lease Area (30.63 Ha)
- Hetkandra Ghat Sand Lease Area (16.34 Ha)
- Tasra Ghat Sand Lease Area (51.60 Ha)

1:3,960

0 40 80 160 240 320 Meters

GEOREFERENCED CADASTRAL PLAN OF CHASNALLA, HETKANDRA AND TASRA GHAT SAND LEASE
SAIL COLLIERIES DIVISION
STEEL AUTHORITY OF INDIA LTD.

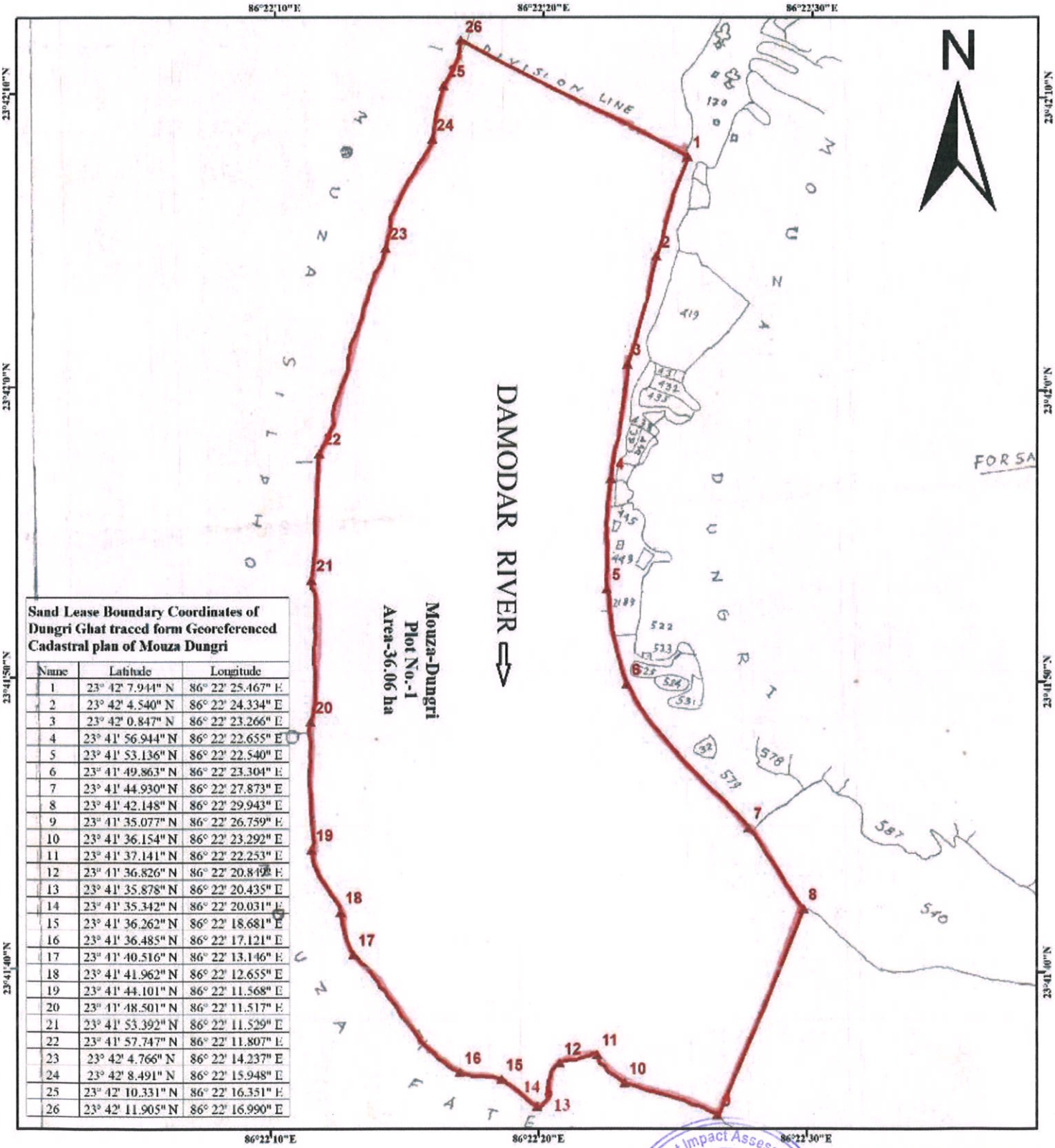
MINE SURVEYING SECTION
DEPARTMENT OF MINING ENGINEERING
IIT (ISM) DHANBAD - 826004

PLAN NO: SAIL/DAM/CHASNALLA, HETKANDRA & TASRA GHAT SAND LEASE/01

Note: Sand Lease Boundary Area from digitized from Cadastral Plan supplied by STEEL AUTHORITY OF INDIA Ltd.

State Level Environment Impact Assessment Authority * Jharkhand, Ranchi *
Approved

GEOREFERENCED CADASTRAL PLAN OF DUNGRI GHAT SAND LEASE CIRCLE JHARIA, DIST-DHANBAD (JHARKHAND) STEEL AUTHORITY OF INDIA LTD.-COLLIERIES DIVISION.



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Approved

State Level Environment Impact Assessment Authority ★ Jharkhand, Ranchi ★

Legend

Dungri Ghat Sand Lease Area (36.06Ha)

1:3,960

0 25 50 100 150 200 Meters

Note: Sand Lease Boundary have been digitized from Cadastral Plan suppied by STEEL AUTHORITY OF INDIA Ltd.

GEOREFERENCED CADASTRAL PLAN OF DUNGRI GHAT SAND LEASE
CIRCLE JHARIA,DIST.-DHANBAD (JHARKHAND)
STEEL AUTHORITY OF INDIA LTD.-COLLIERIES DIVISION.

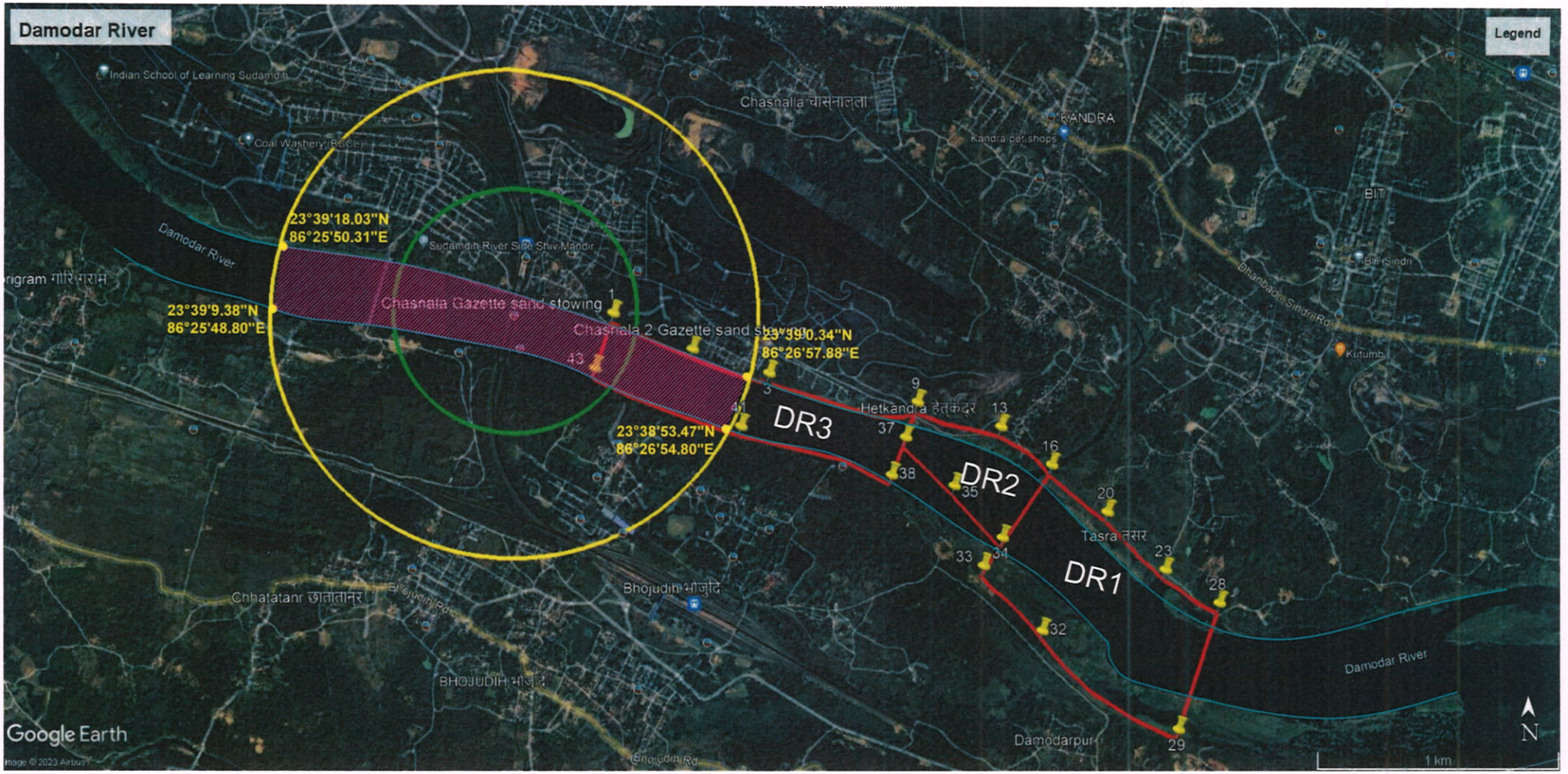
MINE SURVEYING SECTION
DEPARTMENT OF MINING ENGINEERING
IIT (ISM) DHANBAD - 826004

PLAN NO.:IIT(ISM)/SAIL/DUNGRI GHAT SAND LEASE/17-18/01

ANNEXURE-05

NO MINING ZONE MAP OF SAND GHAT

State Level Environment Impact Assessment Authority
Approved
Jharkhand, Ranchi



MAP SHOWING NO MINING ZONE AT DAMODAR RIVER, DHANBAD DISTRICT, JHARKHAND

NO MINING ZONE

500M BUFFER ZONE

1KM BUFFER ZONE

Approved — State Level Environment Impact Authority ★ Jharkhand

Atmos Sustainable Solutions P. Ltd.

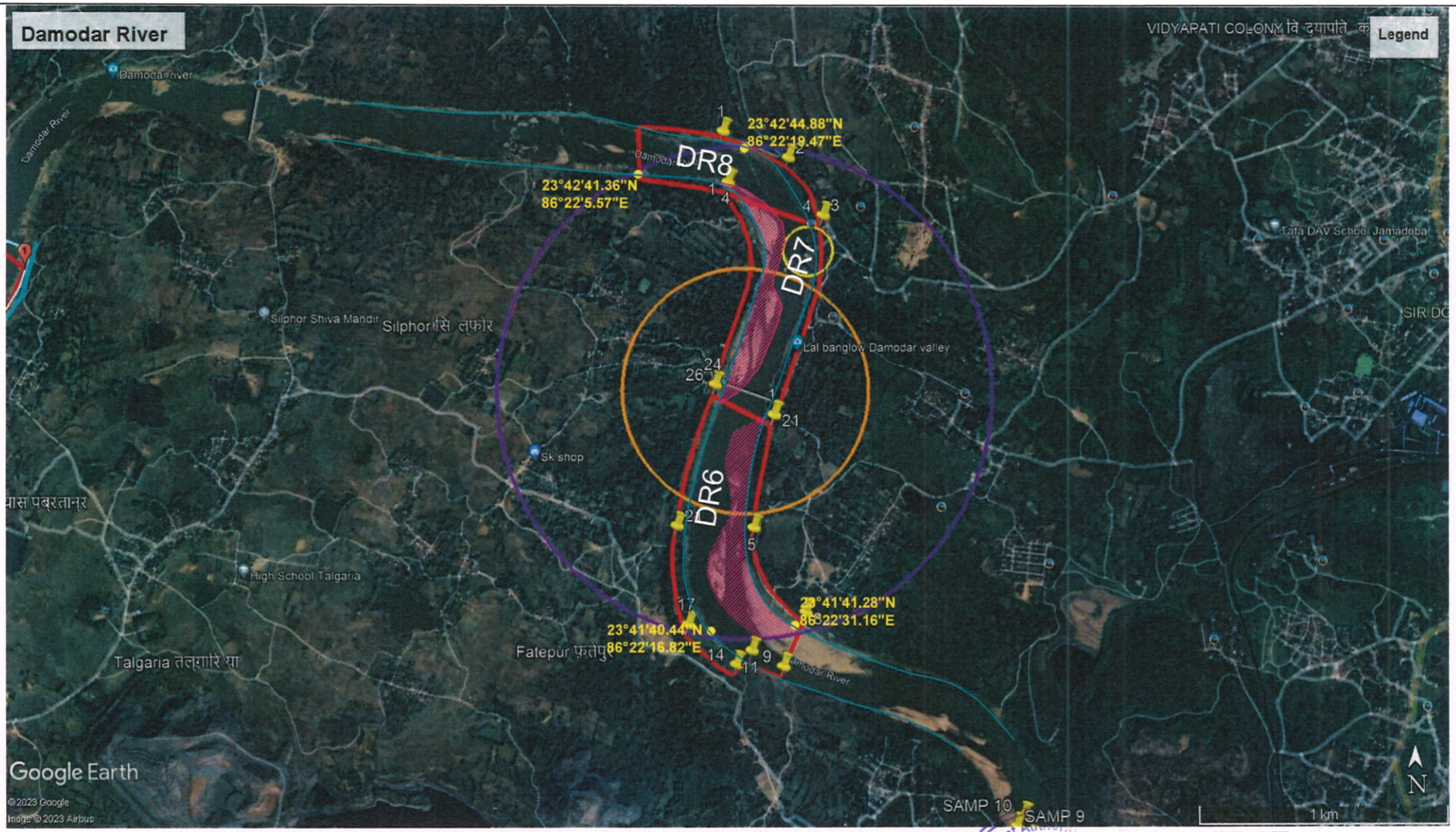
MAP SHOWING NO MINING ZONE AT DAMODAR RIVER, DHANBAD DISTRICT, JHARKHAND

NO MINING ZONE

1KM BUFFER ZONE

Approved
State Level Environment Impact Assessment Authority Jharkhand

Atmos Sustainable Solutions P. Ltd.



MAP SHOWING NO MINING ZONE AT DAMODAR RIVER, DHANBAD DISTRICT, JHARKHAND

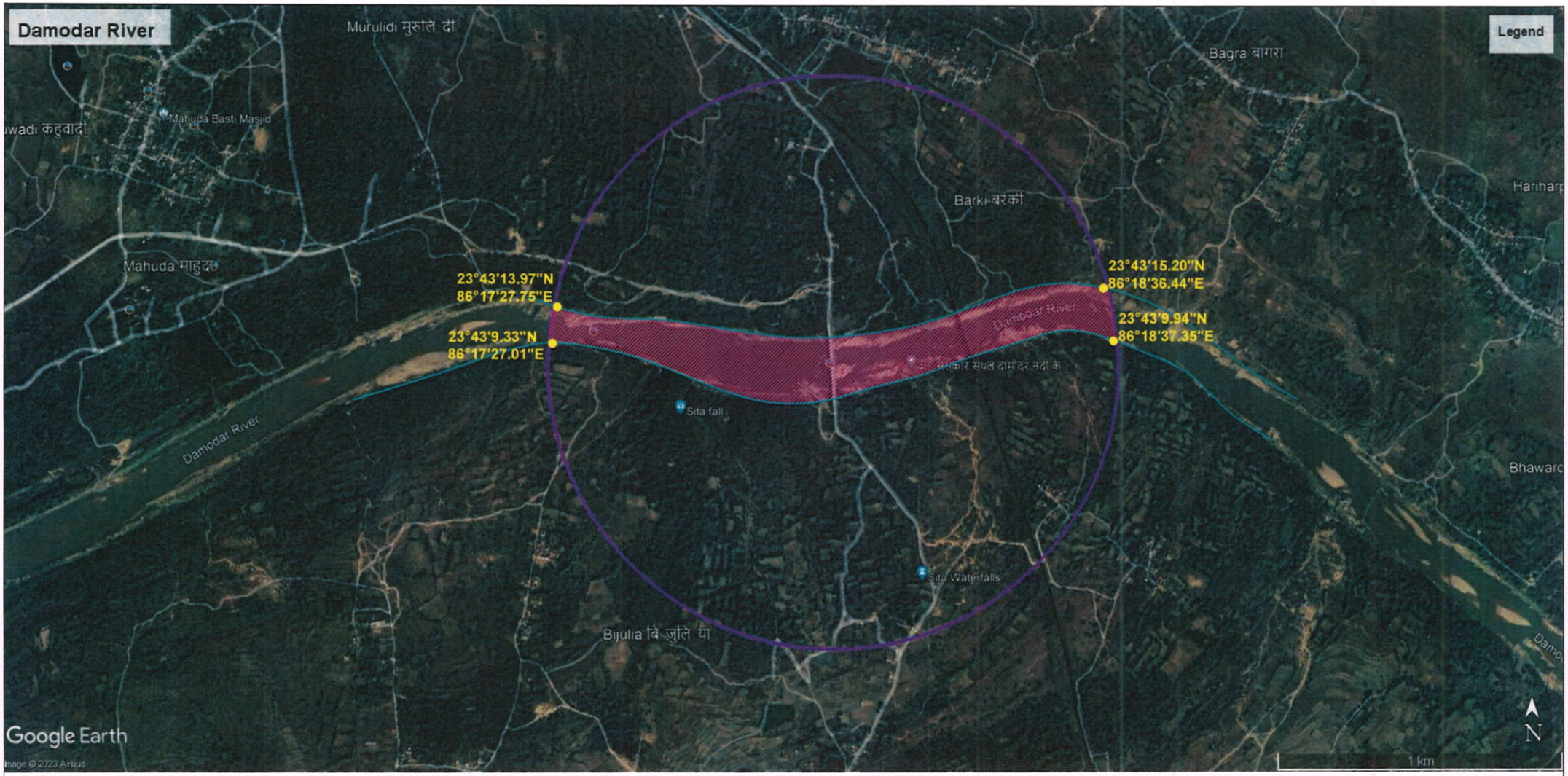
NO MINING ZONE

500M BUFFER ZONE

1KM BUFFER ZONE

Approved State Level Environmental Impact Assessment Authority * Jharkhand

Atmos Sustainable Solutions P. Ltd.



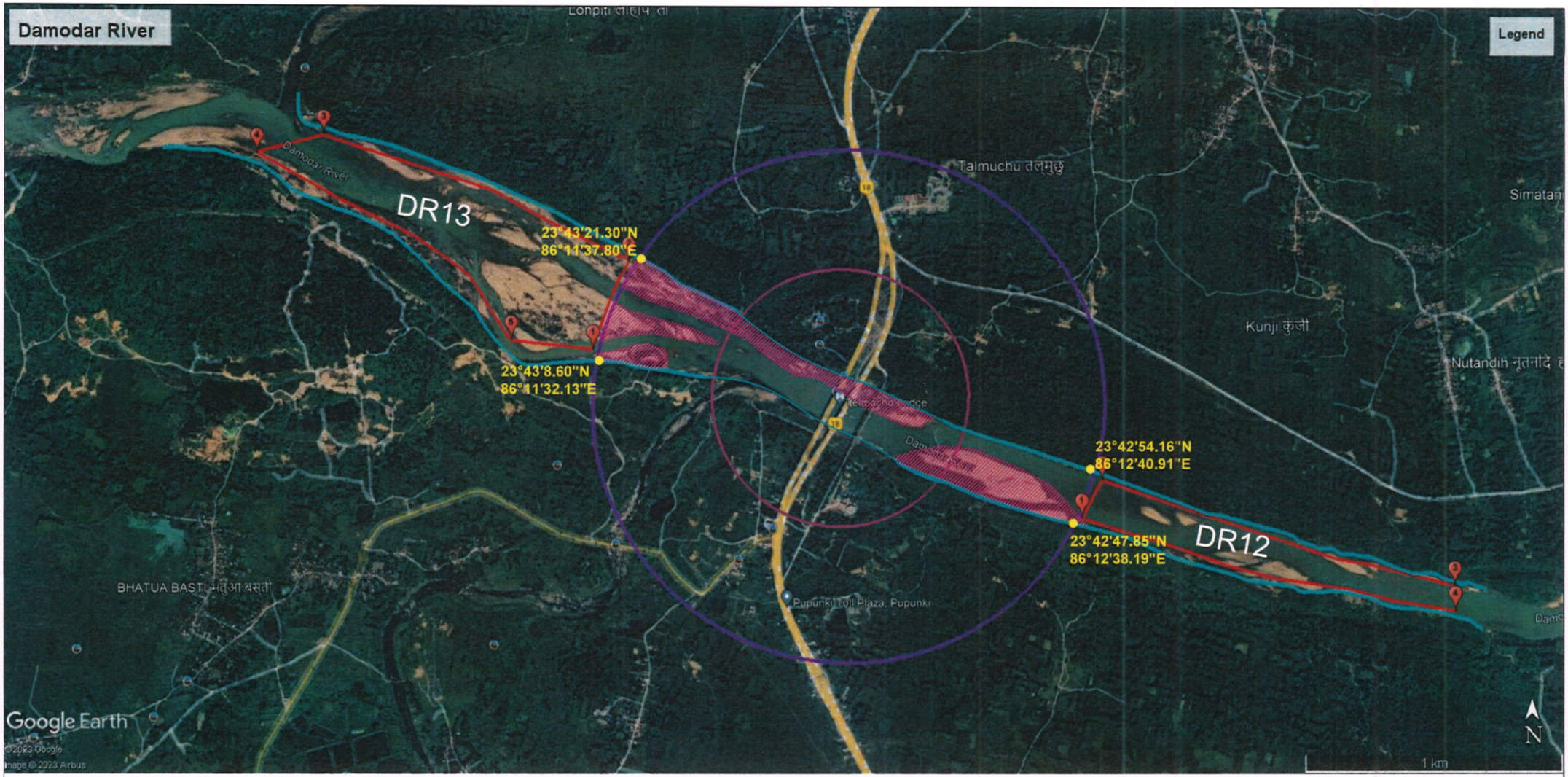
MAP SHOWING NO MINING ZONE AT DAMODAR RIVER, DHANBAD DISTRICT, JHARKHAND

NO MINING ZONE

1KM BUFFER ZONE

State Level Environment Impact Assessment Authority * Jharkhand * Approved

Aimos Sustainable Solutions P. Ltd.



MAP SHOWING NO MINING ZONE AT DAMODAR RIVER, DHANBAD DISTRICT, JHARKHAND

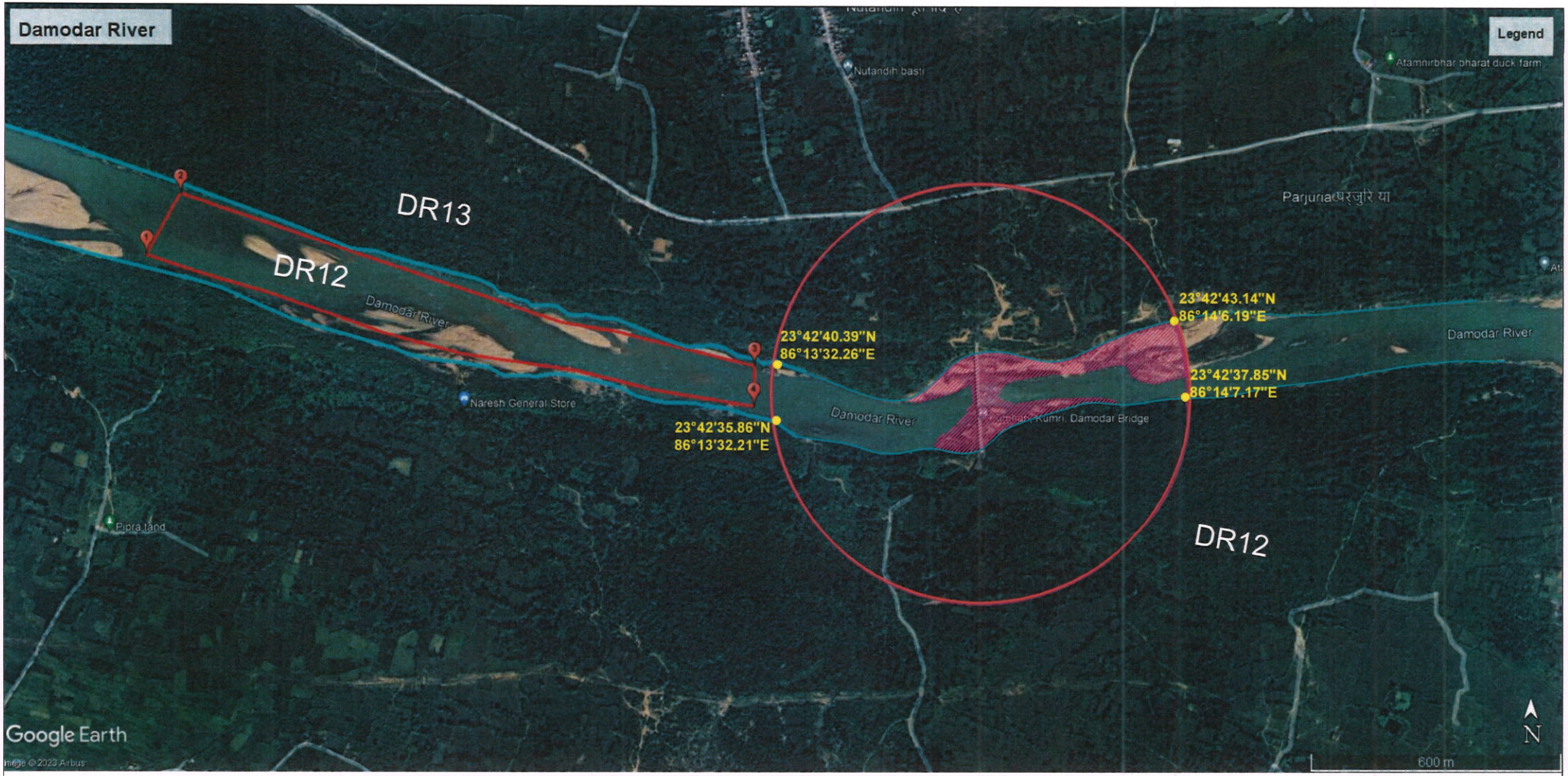
NO MINING ZONE

500M BUFFER ZONE

1KM BUFFER ZONE

Approved
State Level Environment Impact Assessment Authority ★ Jharkhand

Aimos Sustainable Solutions P. Ltd.



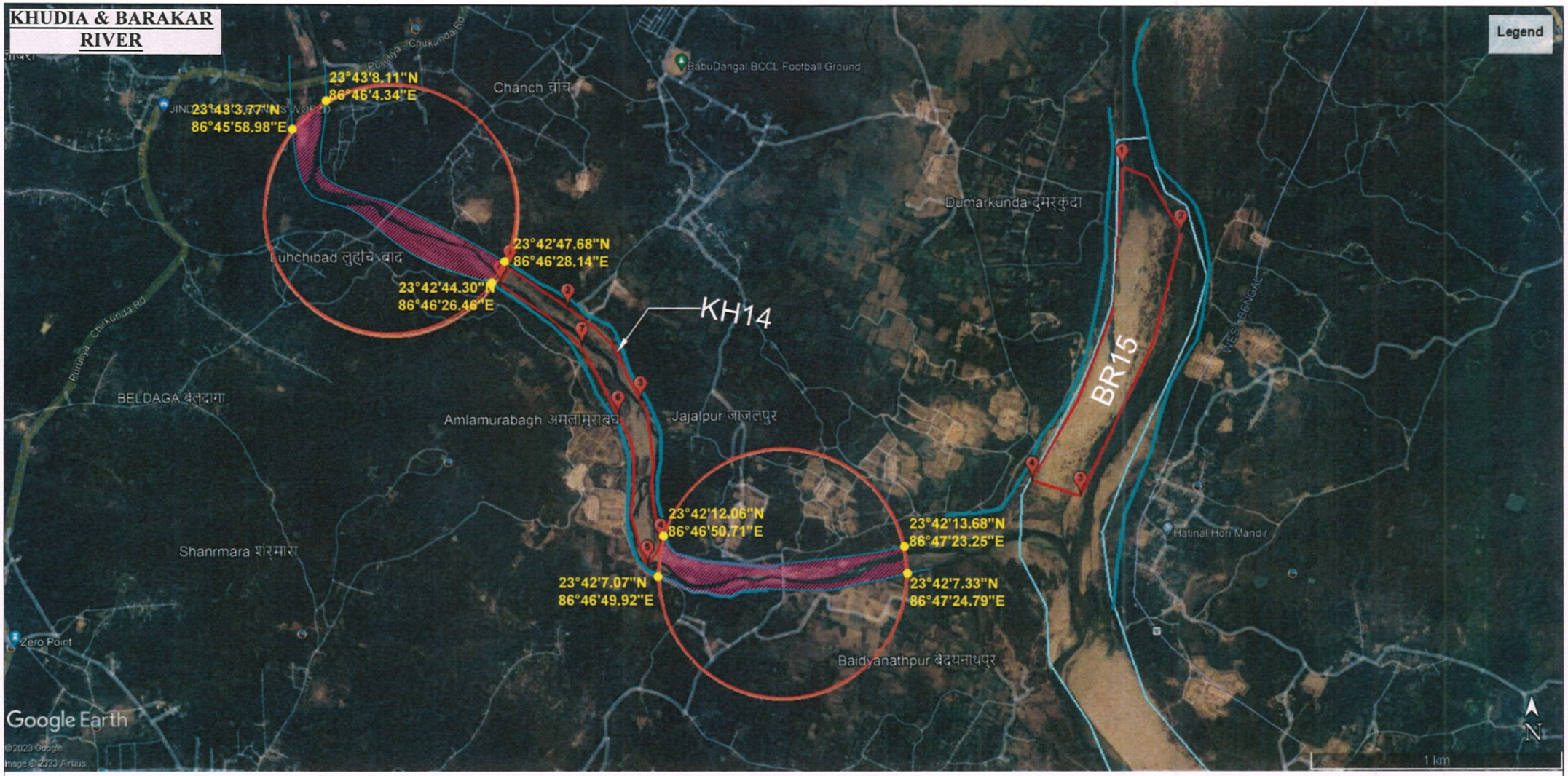
MAP SHOWING NO MINING ZONE AT DAMODAR RIVER, DHANBAD DISTRICT, JHARKHAND

NO MINING ZONE

500M BUFFER ZONE

Approved
State Level Environment Impact Assessment Authority * Jharkhand *

Sustainable Solutions P. Ltd.



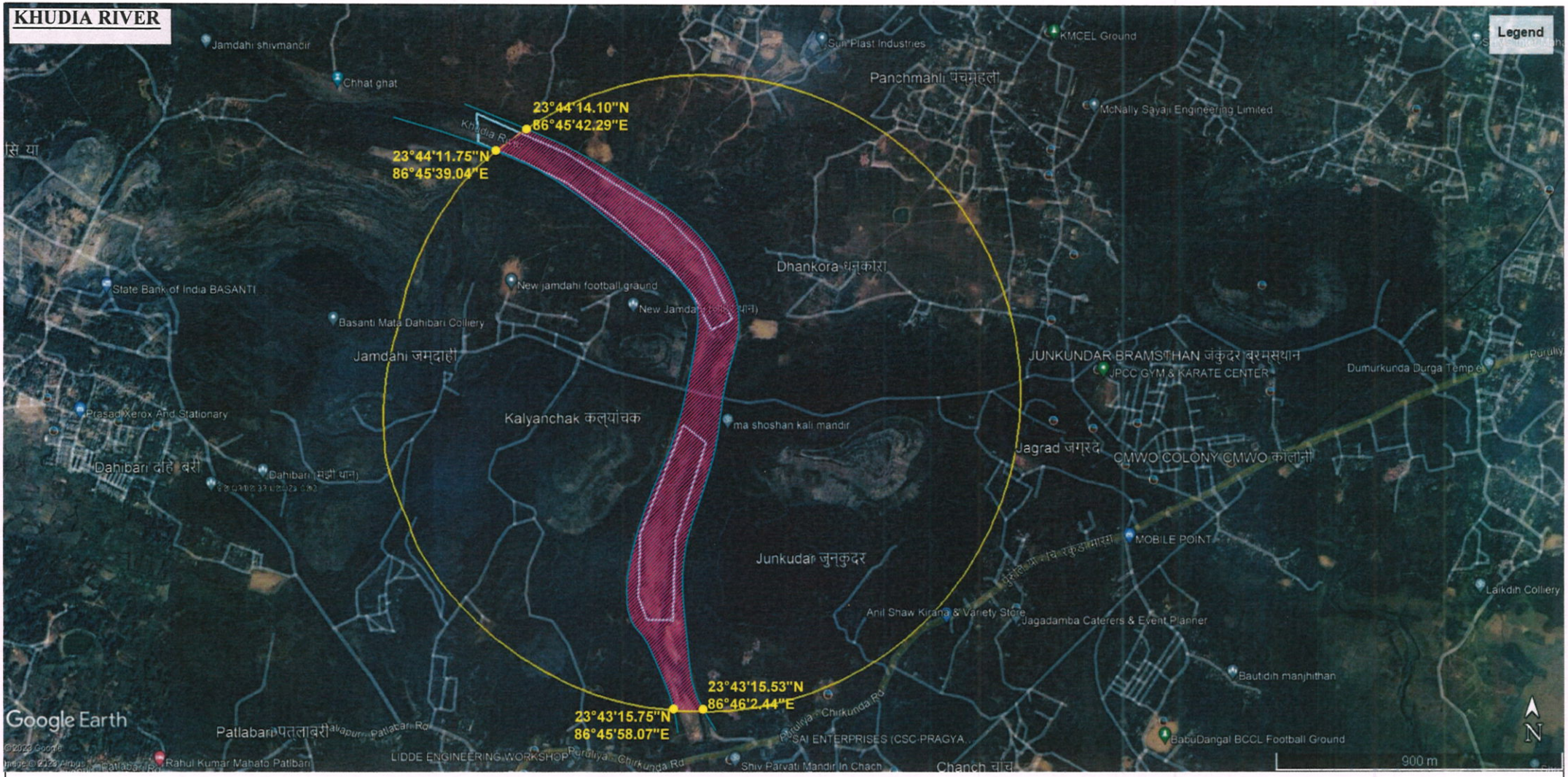
MAP SHOWING NO MINING ZONE AT KHUDIA & BARAKAR RIVER, DHANBAD DISTRICT, JHARKHAND

NO MINING ZONE

500M BUFFER ZONE

Approved
State Level Environment Impact Assessment Authority ★ Jharkhand

Amos Sustainable Solutions Pvt. Ltd.



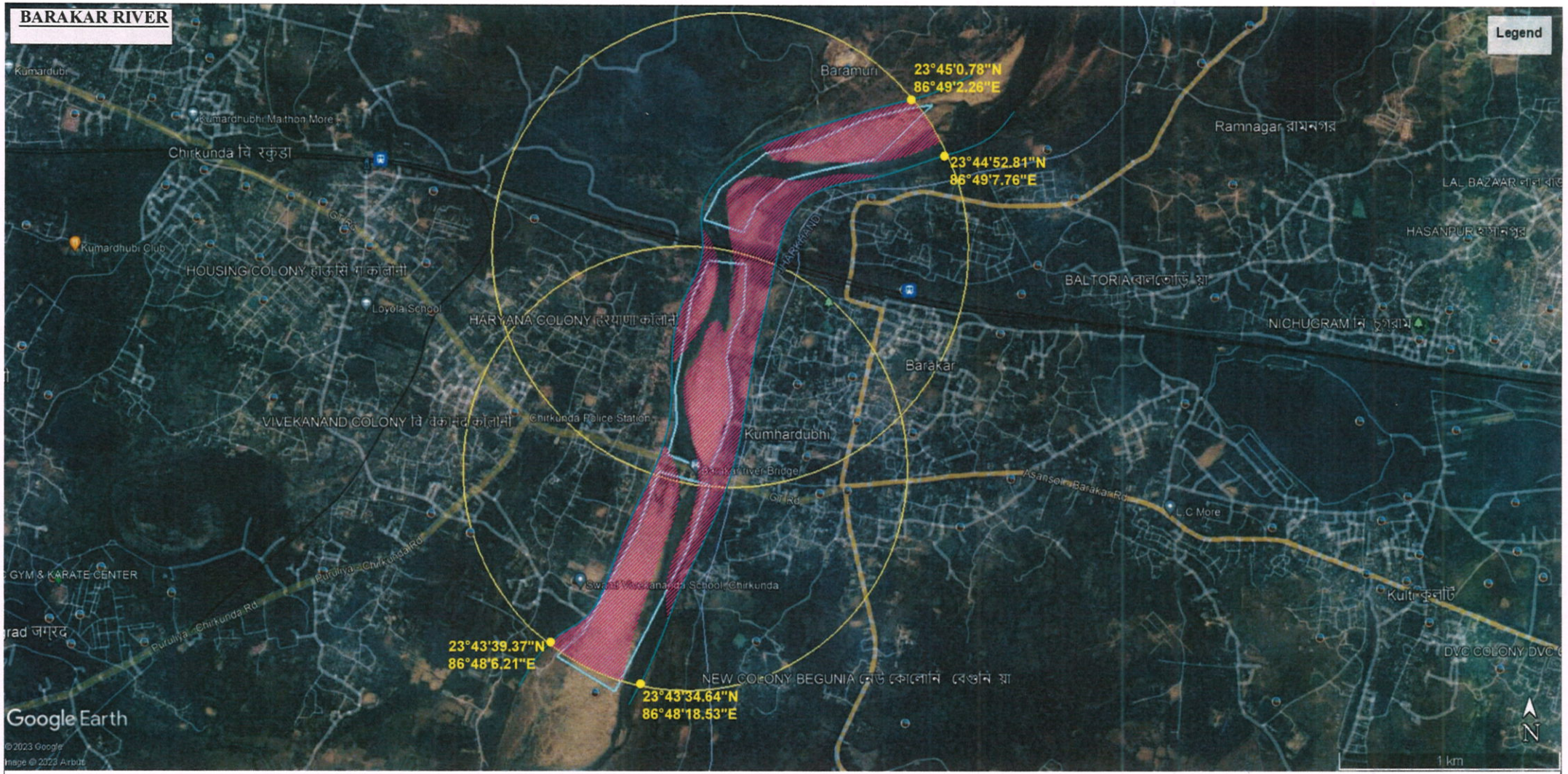
MAP SHOWING NO MINING ZONE AT KHUDIA RIVER, DHANBAD DISTRICT, JHARKHAND

NO MINING ZONE

1KM BUFFER ZONE

Approved — State Level Environment Impact Assessment Authority (SEIAA) Jharkhand

Sustainable Solutions P. Ltd. — Authority



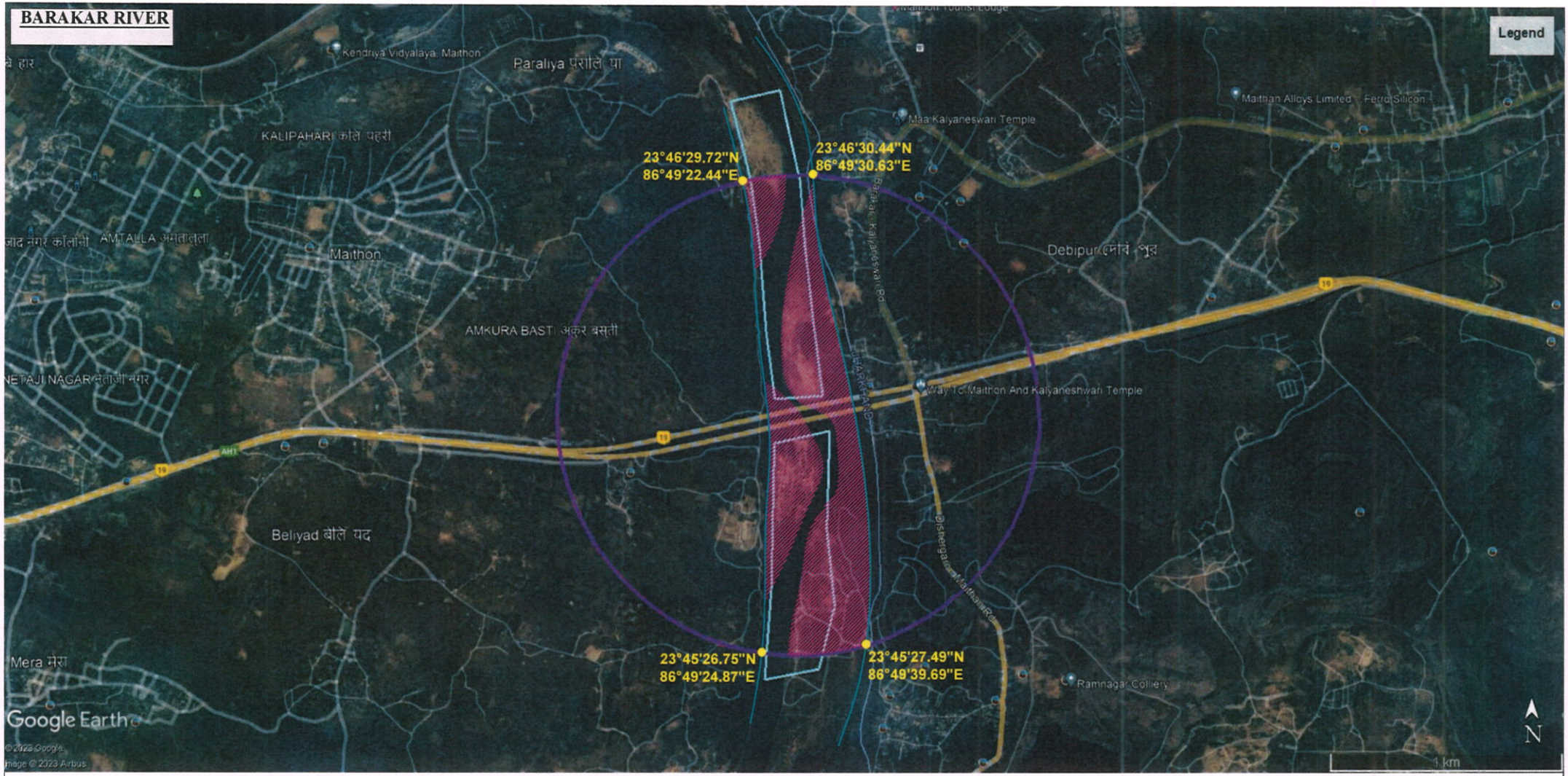
MAP SHOWING NO MINING ZONE AT BARAKAR RIVER, DHANBAD DISTRICT, JHARKHAND

NO MINING ZONE

1KM BUFFER ZONE

Approved Environment Impact Assessment Authority ★ State Level Environment Impact Assessment Authority ★ Jharkhand

Amos Sustainable Solutions P. Ltd.



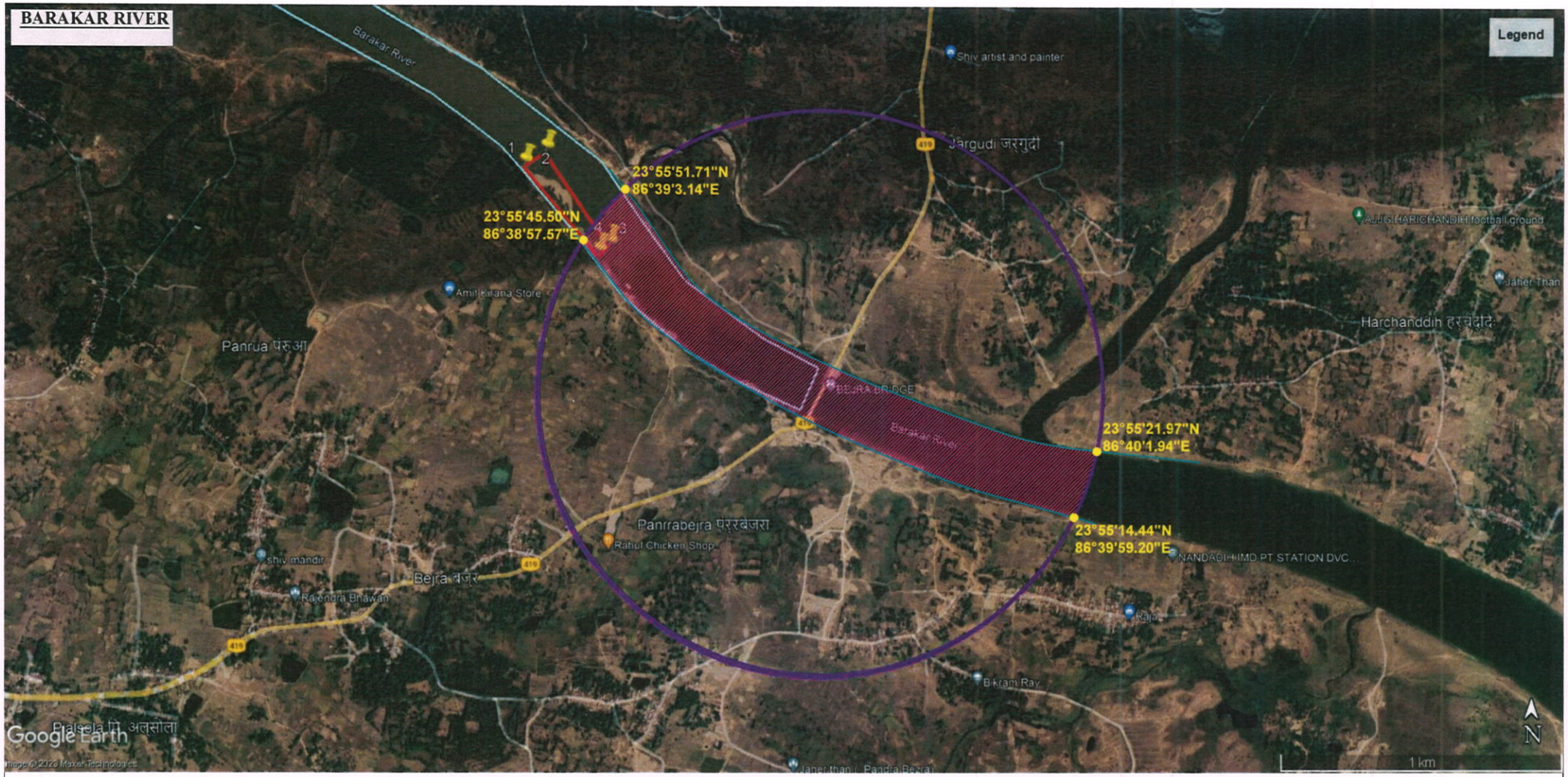
MAP SHOWING NO MINING ZONE AT BARAKAR RIVER, DHANBAD DISTRICT, JHARKHAND

NO MINING ZONE

1KM BUFFER ZONE

Approved ... State Level Environment Impact Assessment Authority ... Jharkhand

... Solutions P. Ltd.



MAP SHOWING NO MINING ZONE AT BARAKAR RIVER, DHANBAD DISTRICT, JHARKHAND

NO MINING ZONE

1KM BUFFER ZONE

Approved — State Level Environment Impact Assessment Authority * Jharkhand

Atmos Sustainable Solutions P. Ltd.

ANNEXURE-06

ROUTE MAP OF SAND GHAT

Potential Area

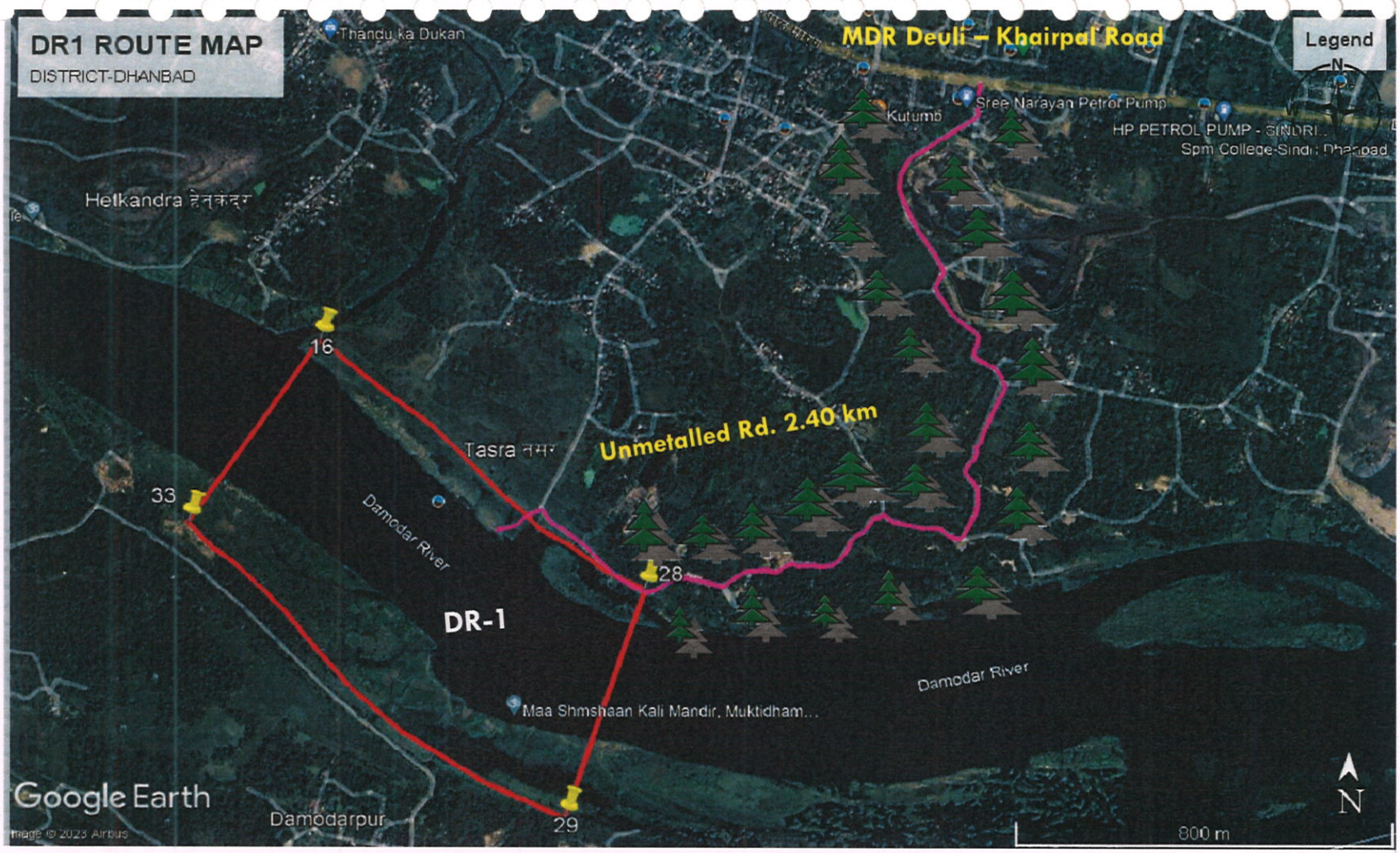
Damodar River

Metalled Road

Unmetalled Road

Plantation

Geo-Coordinates:
23°38'47.77"N
86°27'41.60"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

No Bridge

www.dreamstime.com

Potential Area

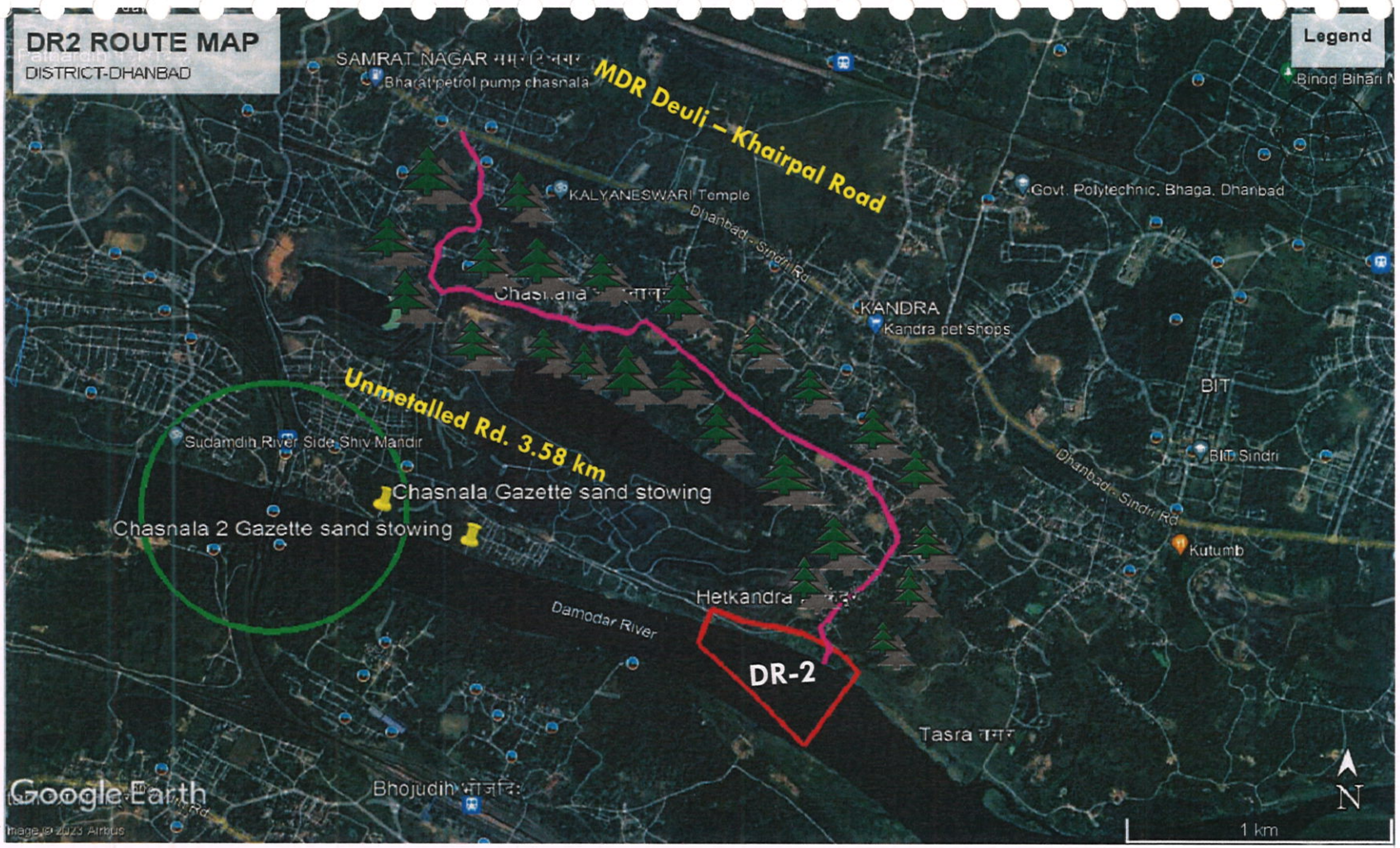
Damodar River

Metalled Road

Unmetalled Road

Plantation

Geo-Coordinates:
23°38'56.11"N
86°27'22.07"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

No Bridge

www.dreamstime.com

Potential Area

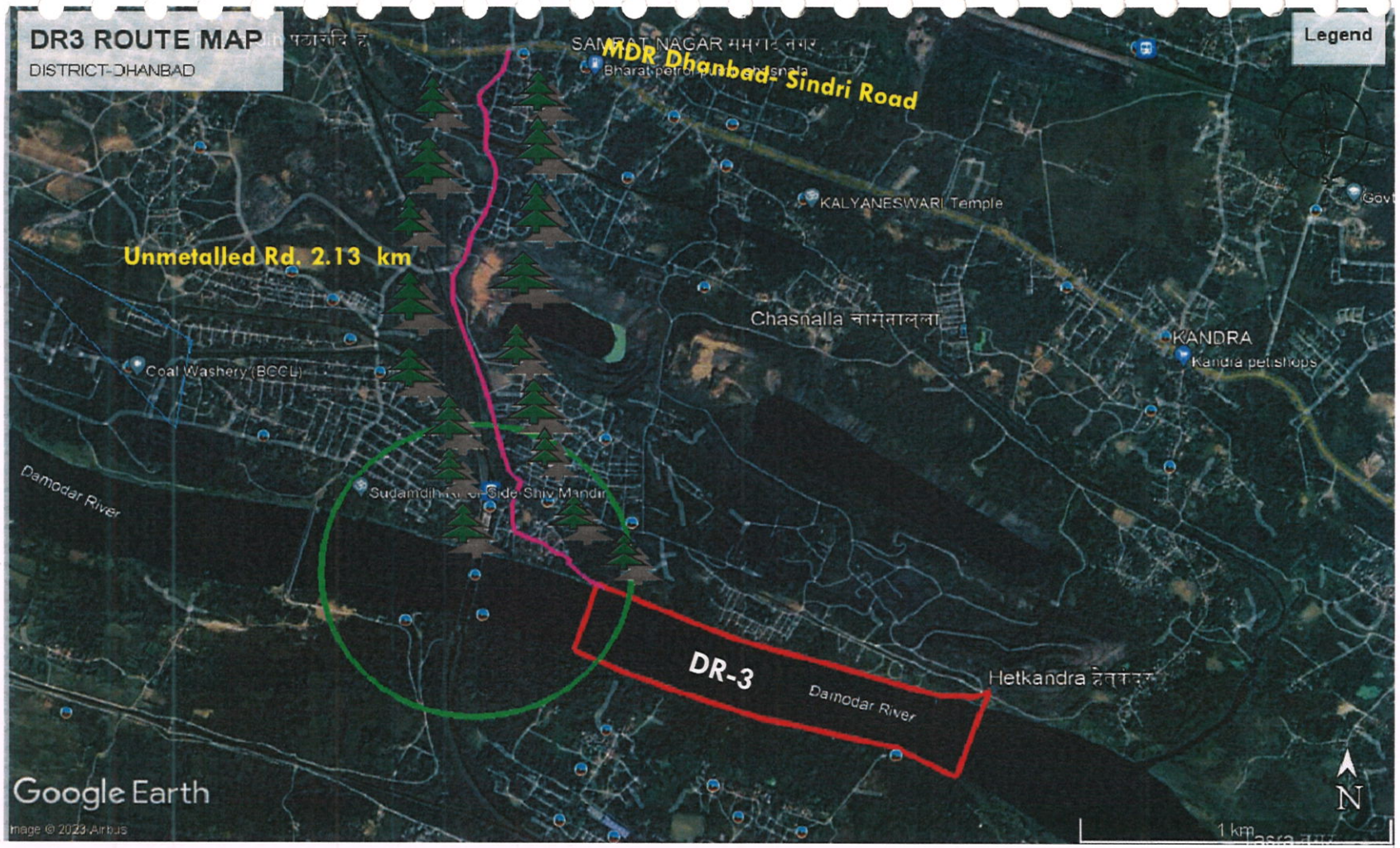
Damodar River

Metalled Road

Unmetalled Road

Plantation

Geo-Coordinates:
23°39'7.87"N
86°26'37.75"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

No Bridge

www.dreamstime.com

Potential Area

Damodar River

Metalled Road

Unmetalled Road

Plantation

Geo-Coordinates:
23°40'44.08"N
86°23'2.41"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

No Bridge

www.dreamstime.com

Potential Area

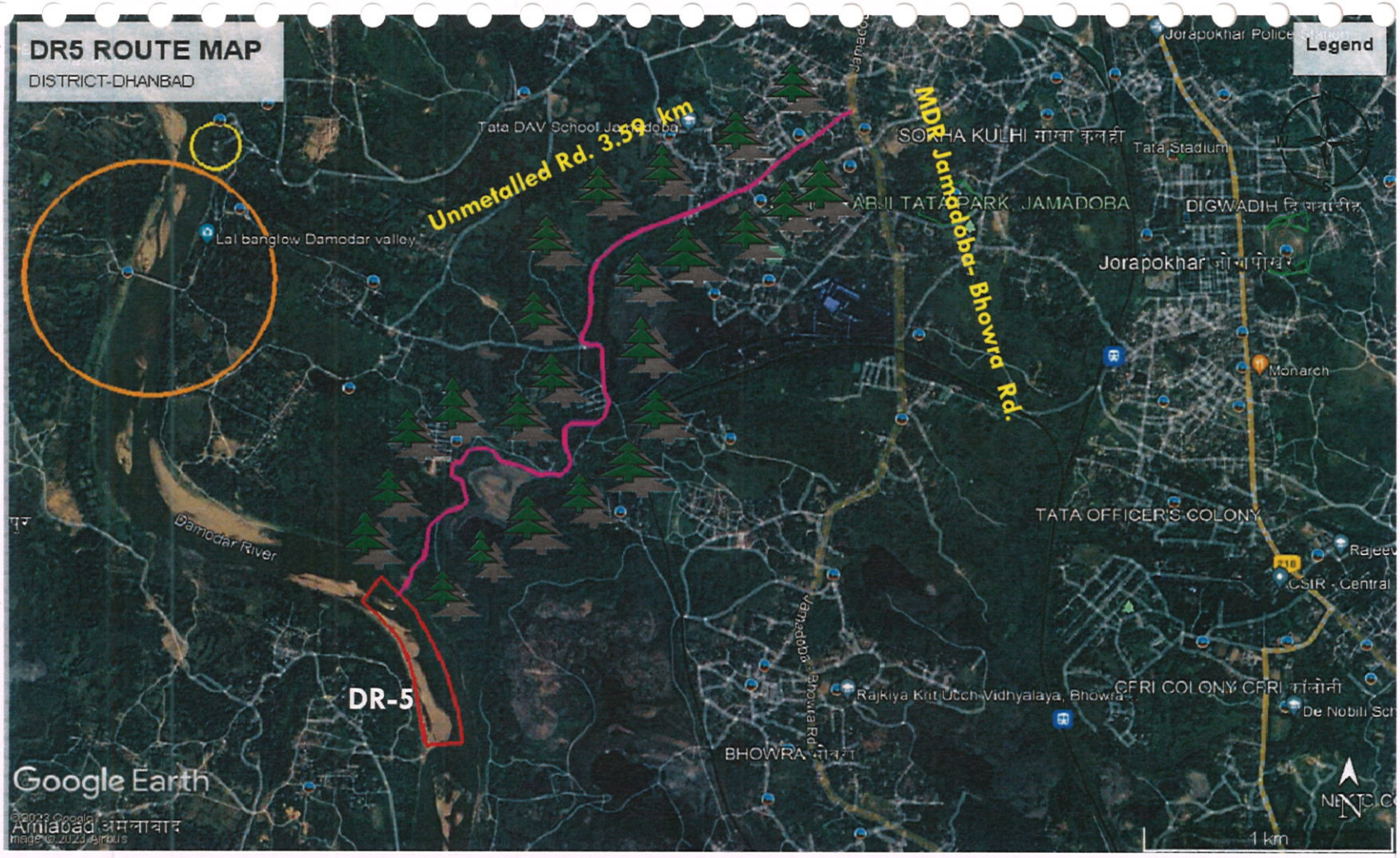
Damodar River

Metalled Road

Unmetalled Road

Plantation

Geo-Coordinates:
23°41'7.34"N
86°23'0.47"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

No Bridge

www.dreamstime.com

Potential Area

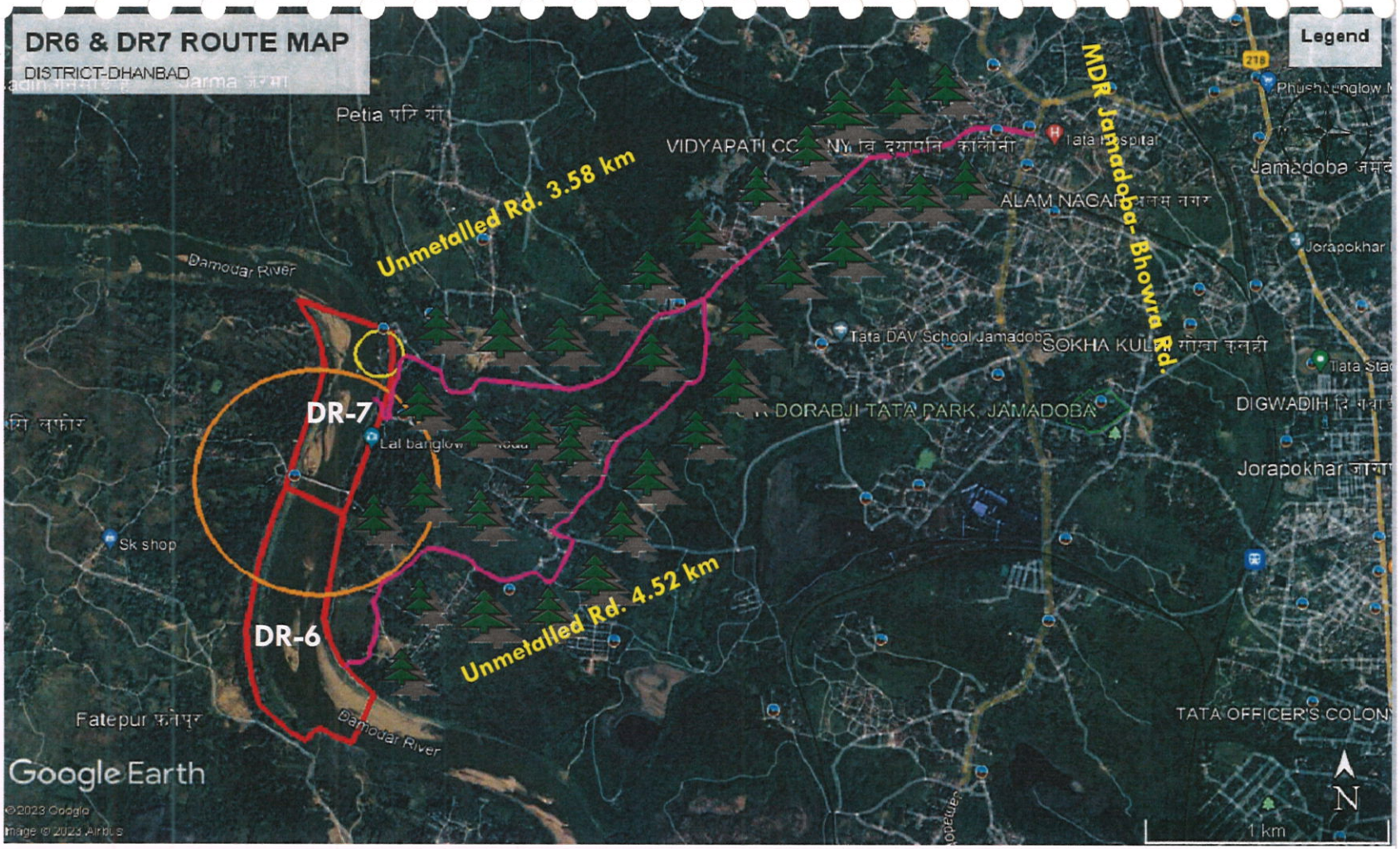
Damodar River

Metalled Road

Unmetalled Road

Plantation

Geo-Coordinates:
23°42'7.94"N 86°22'25.47"E
23°42'38.69"N 86°22'18.78"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

No Bridge

www.dreamstime.com

Potential Area

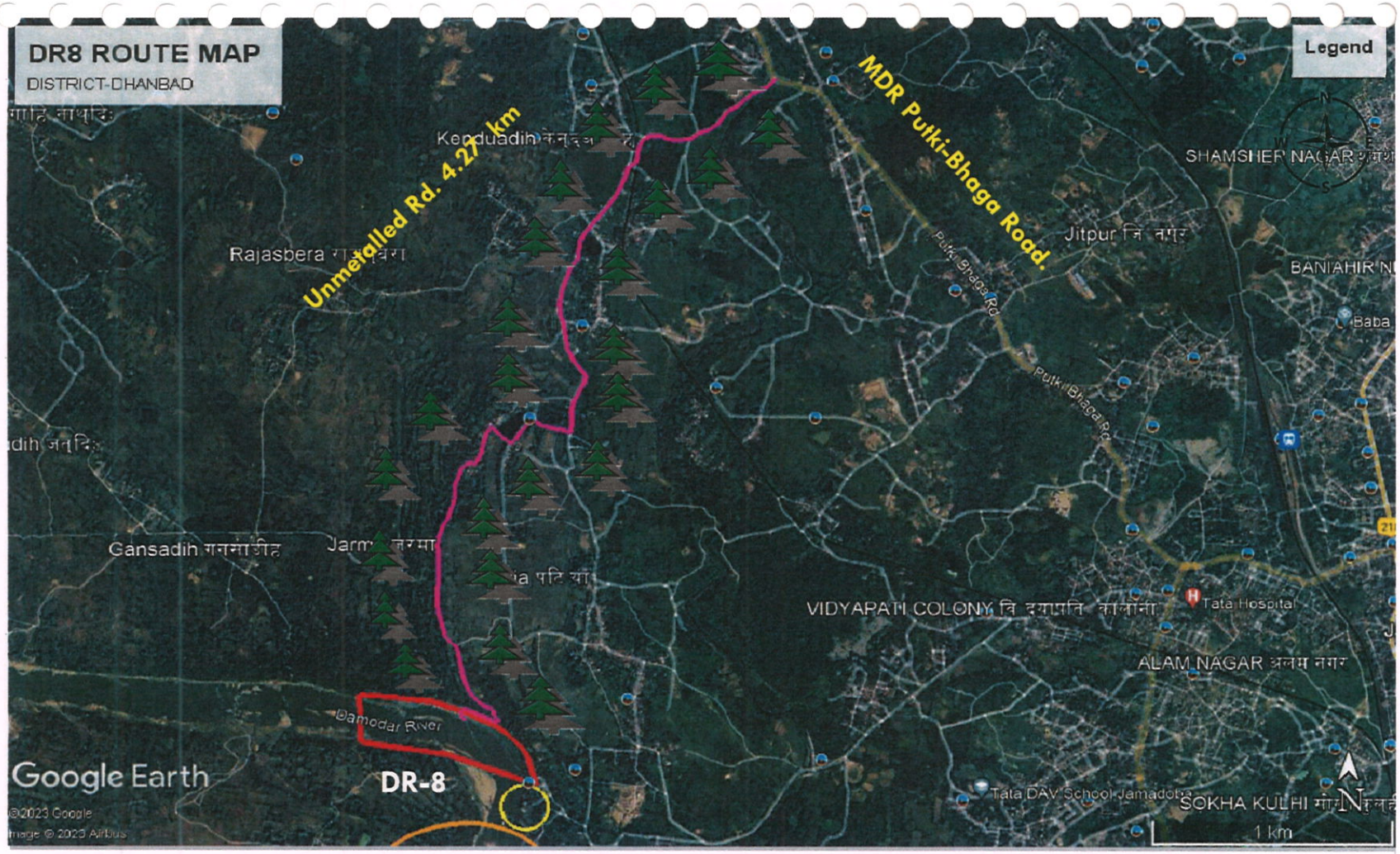
Damodar River

Metalled Road

Unmetalled Road

Plantation

Geo-Coordinates:
23°42'47.47"N
86°22'6.16"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

No Bridge

www.dreamstime.com

Potential Area

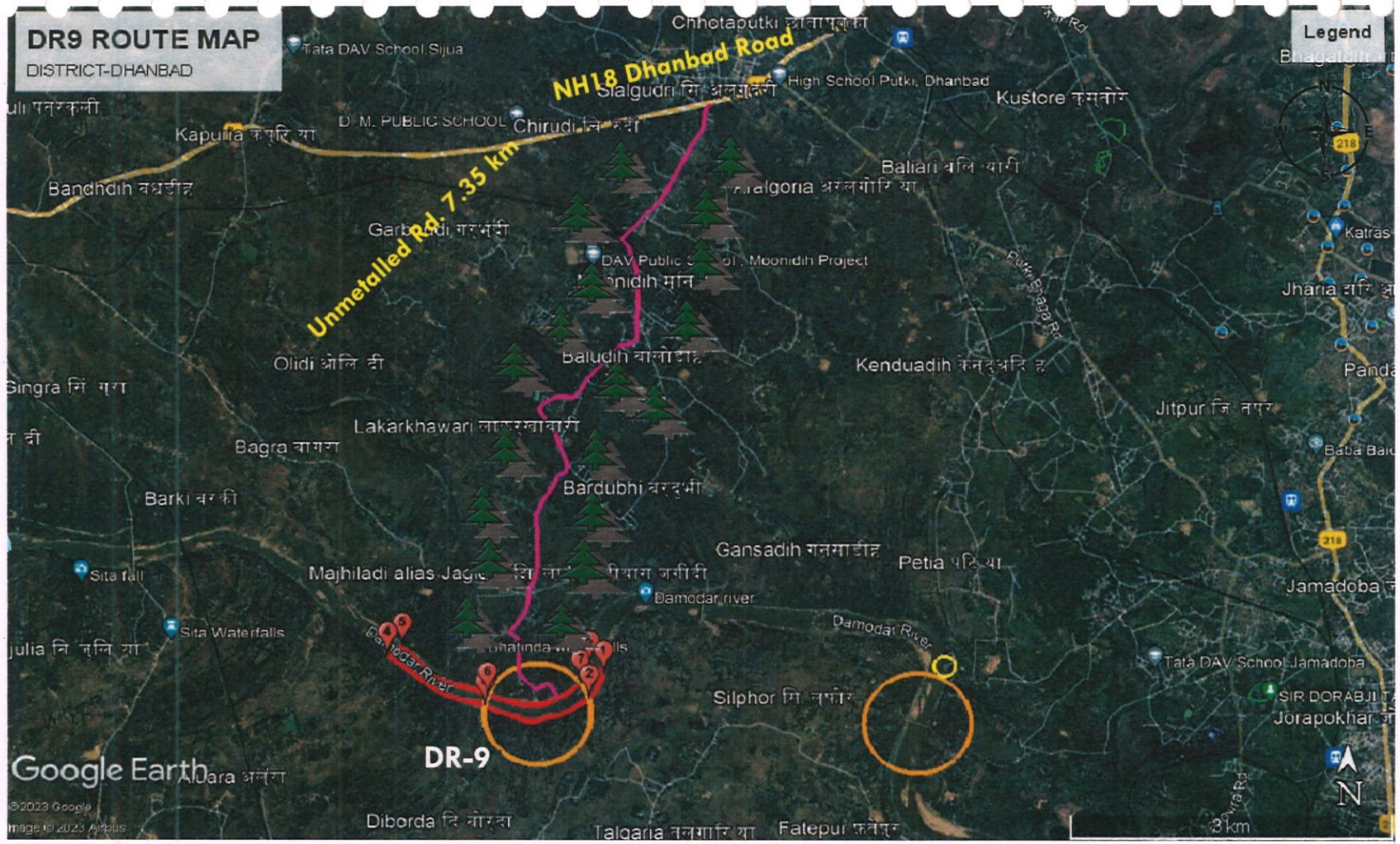
Damodar River

Metalled Road

Unmetalled Road

Plantation

Geo-Coordinates:
23°42'28.51"N
86°20'38.01"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

No Bridge

Atmosphere Sustainable Solutions P. Ltd.
www.dreamstime.com

Potential Area

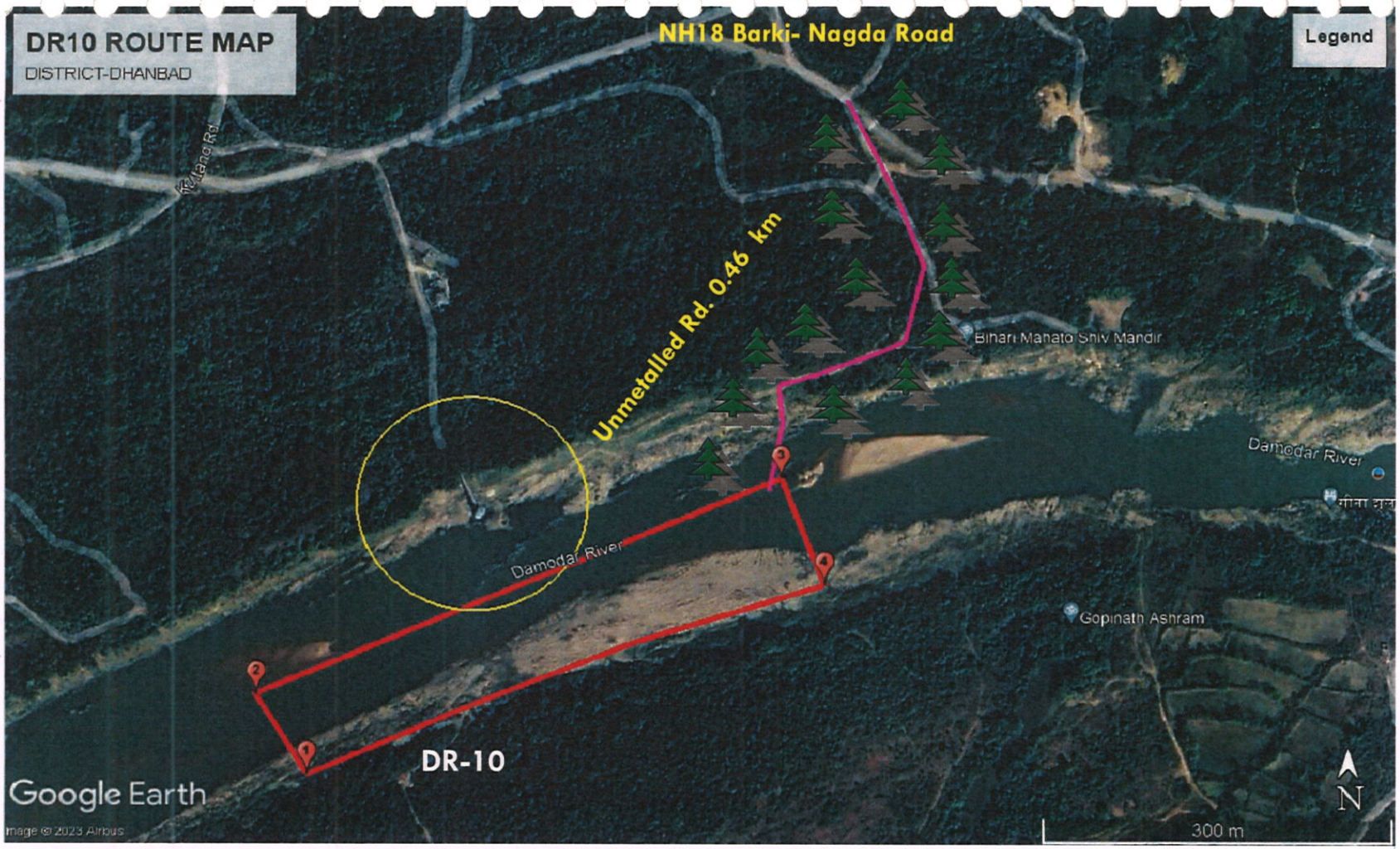
Damodar River

Metalled Road

Unmetalled Road

Plantation

Geo-Coordinates:
23°43'1.65"N
86°16'59.13"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

No Bridge

www.dreamstime.com

Potential Area

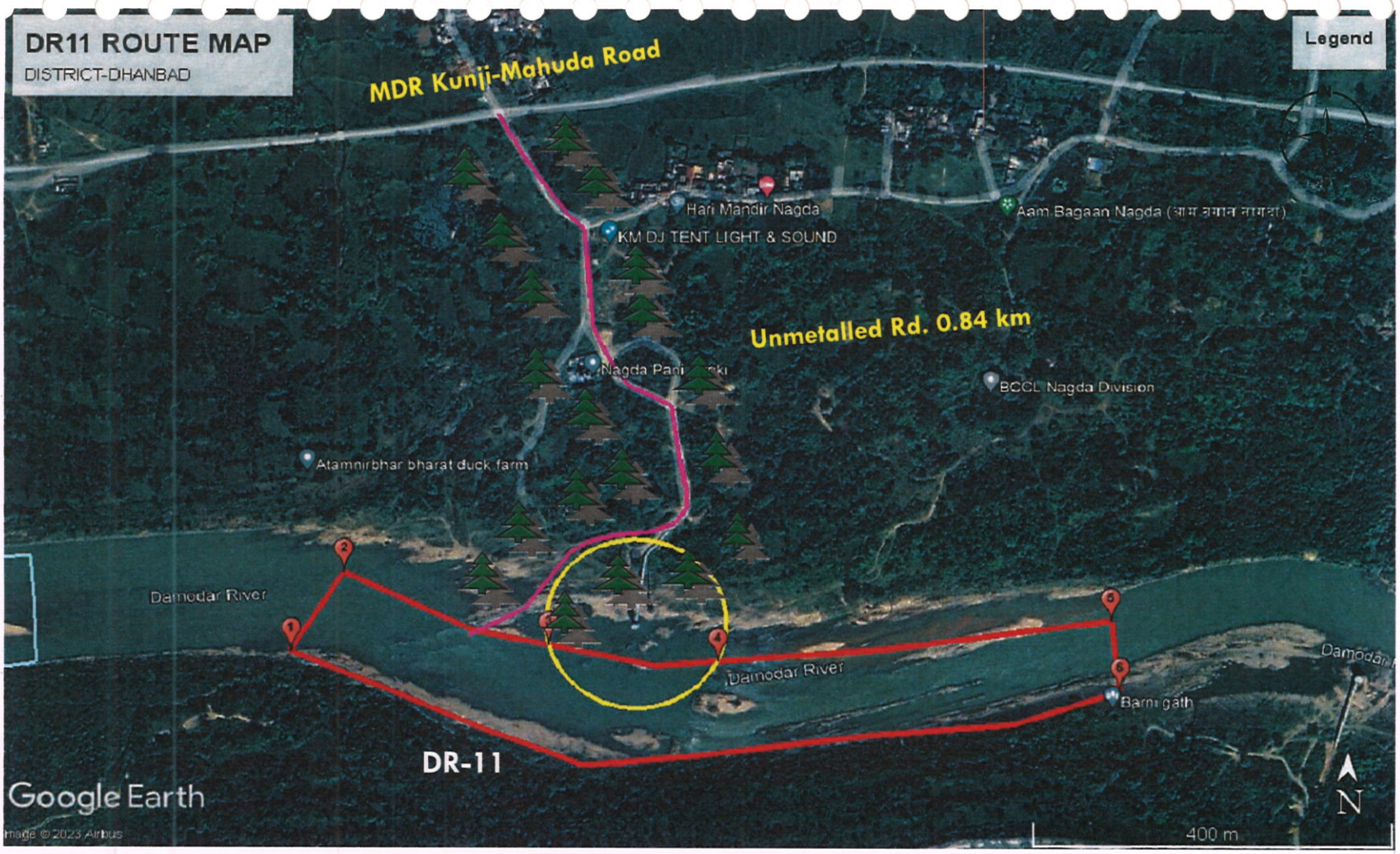
Damodar River

Metalled Road

Unmetalled Road

Plantation

Geo-Coordinates:
23°42'40.68"N
86°14'36.11"E



Route Map of Sand Ghat of Proposed Site

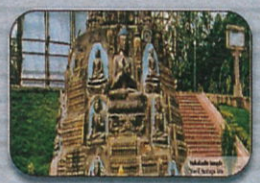
Water body

No High Tension Line

Metalled road

Human Settlement

No Religious Places



No Archaeological Site

No Bridge

www.dr11.org

Potential Area

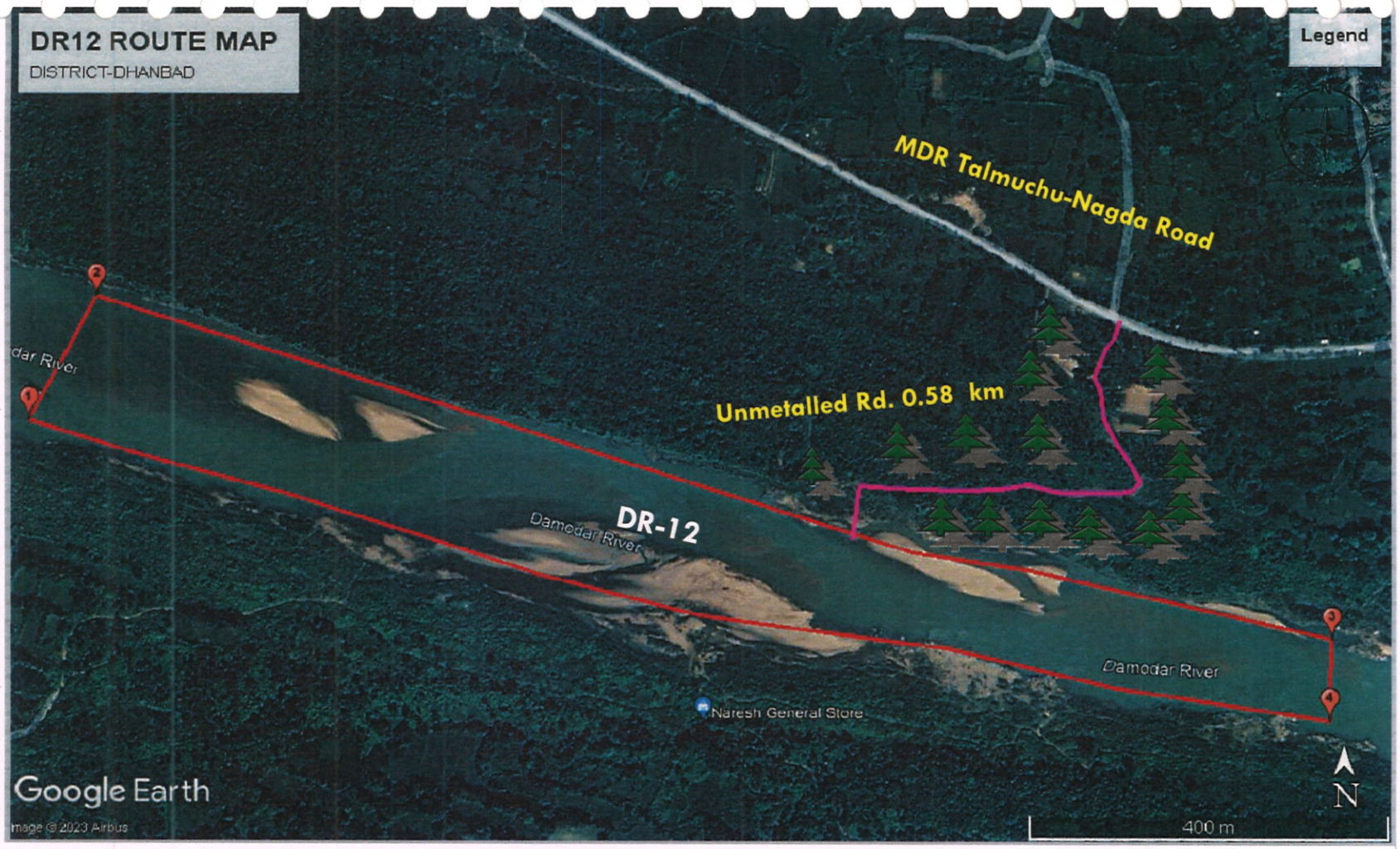
Damodar River

Metalled Road

Unmetalled Road

Plantation

Geo-Coordinates:
23°42'48.58"N
86°12'39.32"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

No Bridge

www.dasbridge.org

Potential Area

Damodar River

Metalled Road

Unmetalled Road

Plantation

Geo-Coordinates:
23°43'9.92"N
86°11'31.41"E

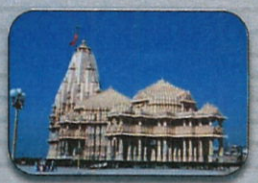
Route Map of Sand Ghat of Proposed Site

Water body

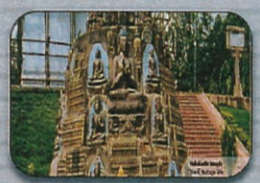
No High Tension Line

Metalled road

Human Settlement



No Religious Places



No Archaeological Site

No Bridge

www.dreamstime.com

Potential Area

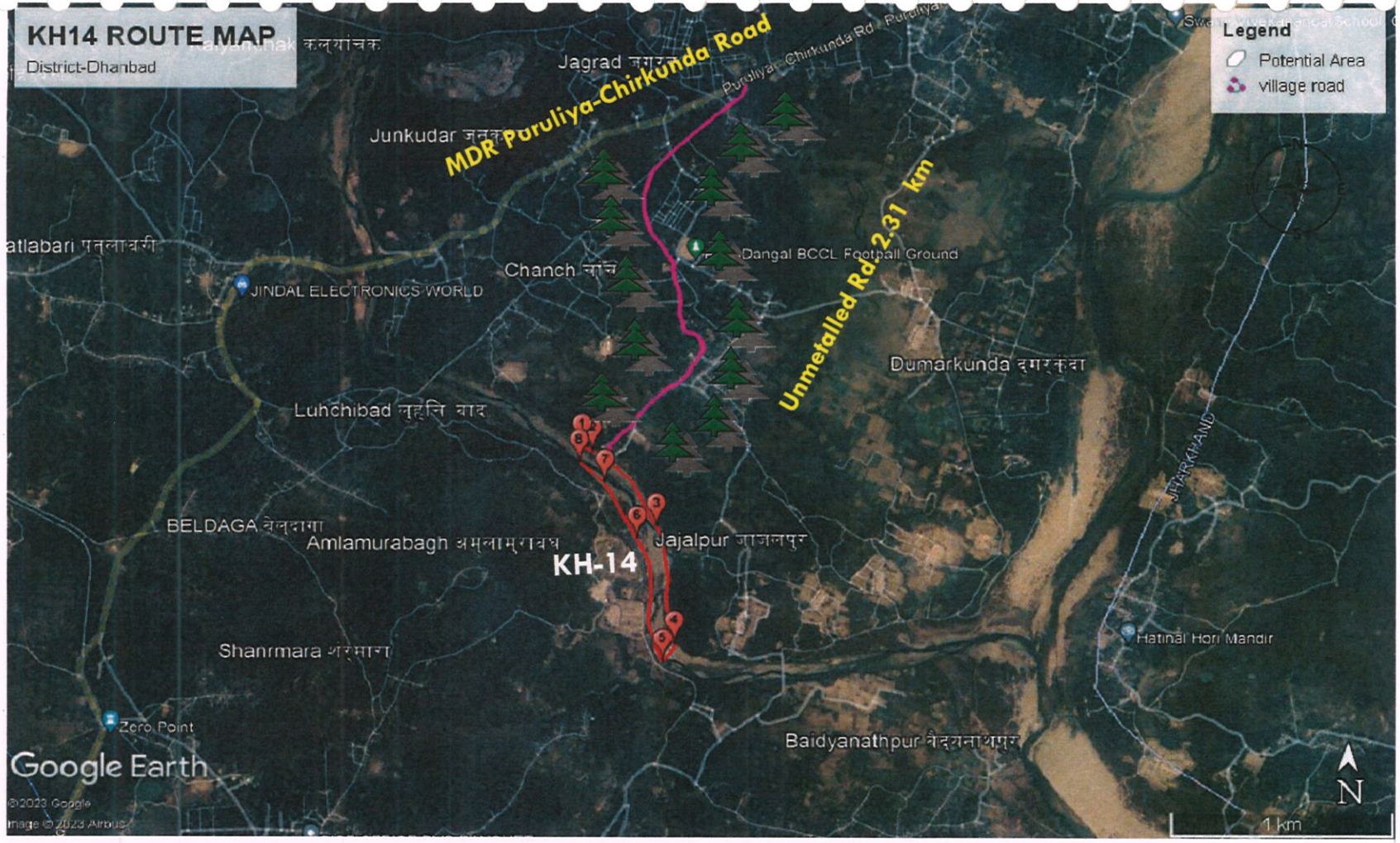
Khudia River

Metalled Road

Unmetalled Road

Plantation

Geo-Coordinates:
23°42'46.63"N
86°46'28.96"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

No Bridge

www.dreamstime.com

Potential Area

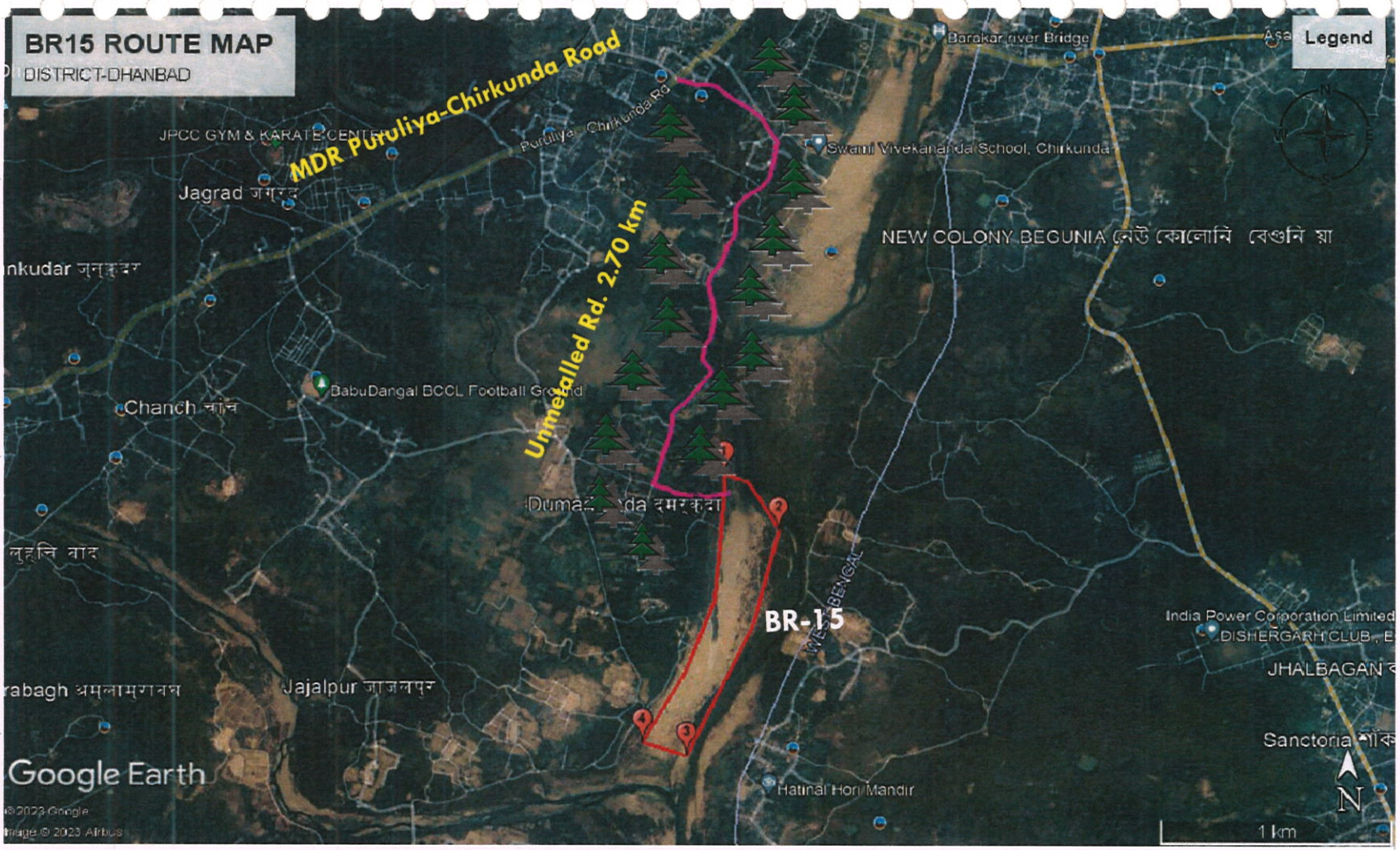
Barakar River

Metalled Road

Unmetalled Road

Plantation

Geo-Coordinates:
23°42'59.79"N
86°47'55.16"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

No Bridge

www.dreamstime.com

Potential Area

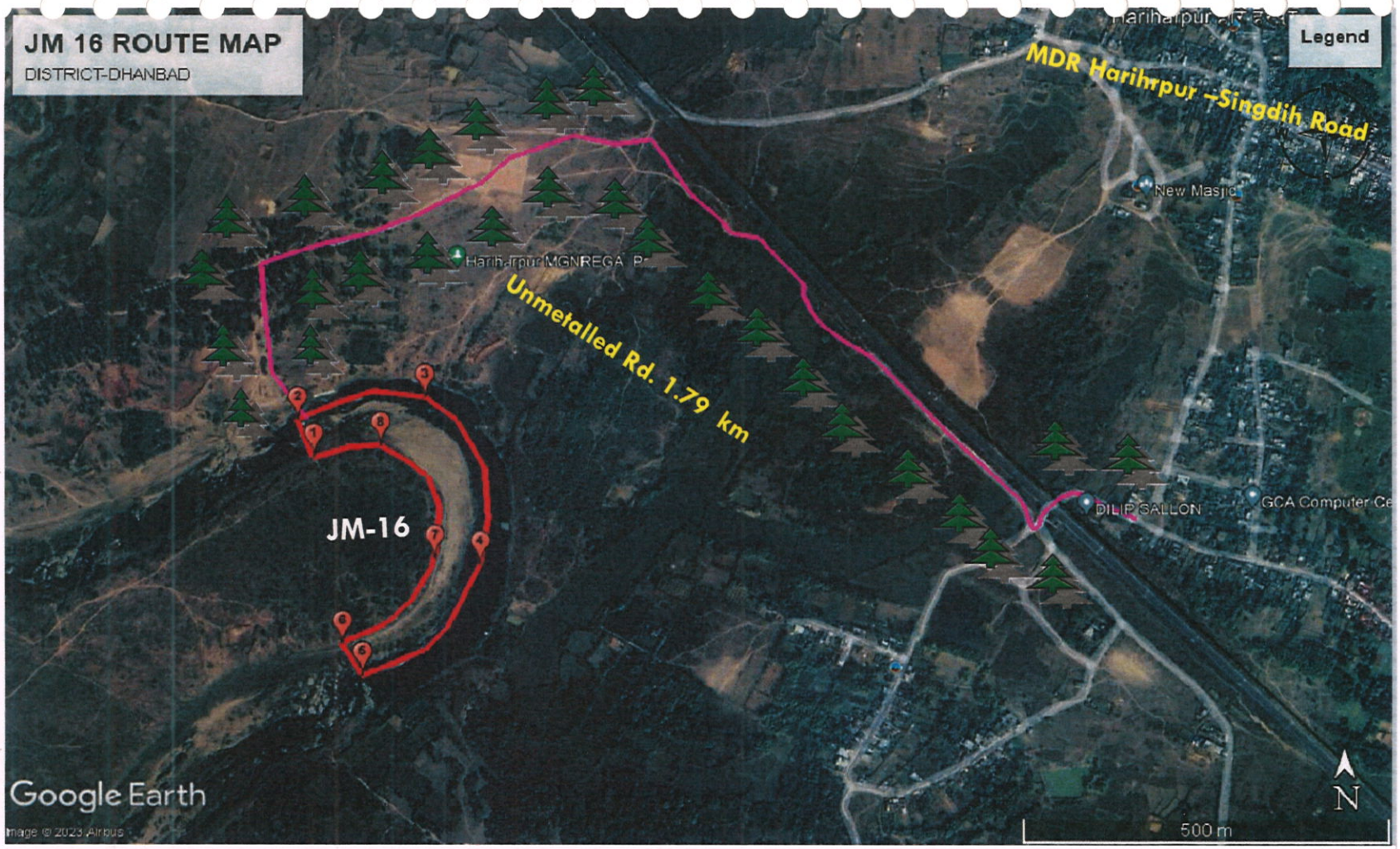
Khudia River

Metalled Road

Unmetalled Road

Plantation

Geo-Coordinates:
23°53'17.24"N
86°7'3.56"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

No Bridge

www.dreamstime.com

Potential Area

Barakar River

Metalled Road

Unmetalled Road

Plantation

Geo-Coordinates:
23°55'54.14"N
86°38'50.27"E

Route Map of Sand Ghat of Proposed Site

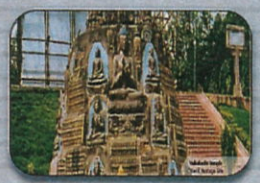
Water body

No High Tension Line

Metalled road

Human Settlement

No Religious Places



No Archaeological Site

No Bridge

www.dreamstime.com

ANNEXURE-07

COPY OF ZOOLOGICAL SURVEY OF INDIA LETTER

Govt. of Jharkhand
Department of Mines & Geology
District Mining Office, Dhanbad
(Email- dmo-dhanbad@jharkhandmail.gov.in)

Letter No. ....79...../M *Dated* 12/01/2023

From:- District Mining Officer,
Dhanbad.

To,

The Director,
Zoological Survey of India,
Prani Vigyan Bhawan,
M-Block, New Alipore
Kolkata, West Bengal-700053

Subject: - Request to provide details regarding the presence of aquatic animal in the Damodar River, Barakar River, Jamuniya River & Khudia River of Dhanbad District jharkhand and proposed potential area enlisted in Dhanbad district Jharkhand.

Dera 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 Dhanbad is in progress.

As per direction given by SEAC, Jharkhand we require to submit the undertaking regarding presence of aquatic animal in the river in proximity of the proposed Potential area 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 river sand in DSR (District Survey Report).

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

Thanking You.

Yours faithfully

12.01.23

District Mining Officer
Dhanbad.

Govt. of Jharkhand
Department of Mines & Geology

District Mining Office, Dhanbad

(Email- dmo-dhanbad@jharkhandmail.gov.in)

Letter No. ...80...../M *Dated* 17/01/2023

From:- District Mining Officer,
Dhanbad.

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 Damodar River, Barakar River, Jamuniya River & Khudia River of Dhanbad District jharkhand and proposed potential area enlisted in Dhanbad district Jharkhand.

Dera 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 Dhanbad is in progress.

As per direction given by SEAC, Jharkhand we require to submit the undertaking regarding presence of aquatic animal in the river in proximity of the proposed Potential area 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 river sand in DSR (District Survey Report).

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

Thanking You.

Yours faithfully

17.01.23

District Mining Officer
Dhanbad.

ANNEXURE-08

COPY OF FISHERY DEPARTMENT LETTER

झारखण्ड सरकार

जिला मत्स्य पदाधिकारी–सह–मुख्य कार्यपालक पदाधिकारी का कार्यालय, धनबाद।

दूरभाष : 0326–2310438, ईमेल : dfodhanbad0@gmail.com

पत्रांक..... / मत्स्य, धनबाद, दिनांक ..... /

प्रेषक,

जिला मत्स्य पदाधिकारी–सह–
मुख्य कार्यपालक पदाधिकारी
धनबाद।

सेवा में,

सहायक निदेशक (भूतत्व),
जिला भूतात्विक कार्यालय, बोकारो।

विषय :– धनबाद जिला अन्तर्गत नदियों में पाये जाने वाले जलीय जीवों से संबंधित सूचनाओं को उपलब्ध कराने के संबंध में।

प्रसंग : जिला खनन कार्यालय, बोकारो का पत्रांक स0नि0भू0–23 दिनांक 02.02.2023

महाशय,

उपरोक्त विषयक एवं प्रासंगिक पत्र के आलोक में धनबाद जिला अन्तर्गत नदियों में पाये जाने वाले जलीय जीवों से संबंधित सूचनाएँ इस पत्र के साथ संलग्न कर भेजी जा रही है।

अनुलग्नक : यथोक्त।

विश्वासभाजन

(मो0 मुजाहिद अंसारी)
जिला मत्स्य पदाधिकारी–सह–
मुख्य कार्यपालक पदाधिकारी
धनबाद।

ज्ञापांक 123 /मत्स्य, धनबाद, दिनांक 11/02/23 /

प्रतिलिपि : जिला खनन पदाधिकारी, धनबाद को सूचनार्थ प्रेषित।
प्रतिलिपि : उपायुक्त, धनबाद को सादर सूचनार्थ प्रेषित।

11/2/23

जिला मत्स्य पदाधिकारी–सह–
मुख्य कार्यपालक पदाधिकारी
धनबाद।

11/2/23

State Level Environment Impact Assessment Authority
Approved
Jharkhand, Ranchi

झील का नाम : जमुनियाँ

क्र० सं०	जीवों के नाम
01	तिलैपिया
02	रोहु
03	कतला
04	मृगल
05	पोठिया
06	कगरई
7	टुर
8	सोर
9	टेंगरा
10	गरई
11	मुरेल
12	टेंगरा
13	झींगा
14	रेवरी
15	सिंघि
16	मांगुर
17	मेढक
18	सर्प (डोर)
19	वाटर स्कोर्पिन
20	वाटर स्टाईडर
21	जाइन्ट वाटर बग
22	वाटर बिटल

Approved
State Level Environment Impact Assessment Authority
Jharkhand, Ranchi

8/02/2023

नदी का नाम – खुदीया नदी

क्र०स	जीवो के नाम
01	02
01	रोहु
02	कतला
03	मृगल
04	तिलोपिया
05	ढुर
06	गरई
07	सोल
08	पोठिया
09	मांगुर
10	टेंगरा
11	जींगा
12	मेक्न
13	कधुआ
14	सर्पि (होर)
15	वाटर स्कोर्पियन
16	वाटर स्ट्राइडर
(17)	वाटर बिटल
18	कोरेड बग

नदी का नाम – कतरी नदी

क्र० स०	जीवो के नाम
01	रोहु
02	कतला
03	मृगल
04	तिलोपिया
5	ढुर (eel)
6	गरई
7	सोल
8	पोठिया
9	मांगुर
10	~~मेंक~~ जींगा
11	मुरला
12	मेक्न
13	कधुआ
14	सर्पि (होरु)
(15)	वाटर स्कोर्पियन
16	वाटर स्ट्राइडर
17	वाटर बिटल
(18)	कोरेड बग

State Level Environment Impact Assessment Authority
Approved
Jharkhand, Ranchi

3/01/2023

नदी का नाम :- बराकर नदी (मैथन जलाशय)

क्र०सं	जीवों के नाम	क्र००	
01	रोहु	26	चेलवा
02	कतला	27	बाँटा
03	मृगल	28	मेहक
04	ग्रास कार्प	29	कछुआ
05	अमेरिकन रोहु	30	सर्प (होड़)
06	आड	31	वाटर स्कोपियन
07	टेगरा	32	वाटर इर्टाइडर
08	खैरी	33	वाटर विटल
09	टुड	34	कोरेट वग
10	सिंधि		
11	कजली		
12	चितल		
13	फ्लाट		
14	सिल्वर कार्प		
15	हारका पोठी		
16	काटा पोठी		
17	तेलिपिया		
18	मांगुर		
19	गेटुल		
20	कोई		
21	वास पत्ता		
22	पोठीया		
23	चैंग		
24	सोल		
25	झींगा		

8/02/2023

State Level Environment Impact Assessment Authority
Approved
Jharkhand, Ranchi

नदी का नाम : दामोदर नदी

क्र०	जीवों के नाम	क्र०	
1	2	1	02
1	तिलैपिया फीस	28	डेडका फीस
2	रोहु "	29	झींगापोता फीस
3	कतला "	29	चितल फीस
4	मृगल "	30	कच्की फीस
5	अमेरिकन कार्प "	31	गौलदा सिंगडी
6	झाड़ "	32	झींगा
7	बोचाटु "	33	बाटा फीस
8	टाइगर फीस	34	मेंढक
9	रेवरी "	35	कछुआ
10	कच्चा "	31	ईल (सर्प)
11	उडार	37	कोरेड बग
12	काजली "	38	वाटर स्कोपिन
13	सिंदि "	39	वाटर स्ट्राइडर
14	कोम "	40	जाइन्ट वाटर बग
15	दुडु "	41	स्माल वाटर स्टाइडर
16	गोता "	42	वाटर बिटल
17	सोल "		इत्यादि
18	भेदा		
19	गरई "		
20	गोइया		
21	मुरला		
22	गुरन्दा		
23	कालबासु		
24	टेंगरा		
25	मांगुर		
26	रायरवडी		

State Level Environment Impact Assessment Authority
Approved
Jharkhand

ANNEXURE-09

COPY OF NEWS PAPER CUTTING

ाकघर की छोटी
चत पर ब्याज
.1% बढ़ाया

फैसला

: दिल्ली, एजेंसी। नए साल में
कघर की छोटी बचत पर आपको
ादा ब्याज मिलेगा। सरकार ने
क्रवार को डाकघर की सावधि
मा (एफडी), एनएससी और
रिष्ठ नागरिक बचत योजना सहित
छोटी बचत जमा योजनाओं पर ब्याज
दरों में 1.1 प्रतिशत तक बढ़ोतरी
की। यह बढ़ोतरी एक जनवरी से
लागू होगी। सरकार की यह वृद्धि
हाल में ब्याज दरों में हुई बढ़ोतरी के
अनुरूप है। हालांकि, सार्वजनिक
भविष्य निधि और बालिका बचत
योजना पर ब्याज समृद्धि की ब्याज दरों
में बदलाव नहीं किया गया है। सितंबर
में भी इसे स्थिर रखा गया था।
राष्ट्रीय बचत प्रमाणपत्र
(एनएससी) पर एक जनवरी से सात
फीसदी की दर से ब्याज मिलेगा। अभी
यह 6.8 फीसदी है। इसी तरह, वरिष्ठ
नागरिक बचत योजना में मौजूद 7.6
प्रतिशत के मुकाबले आठ प्रतिशत
ब्याज मिलेगा। पहले से पांच साल की
अवधि की डाकघर सावधि जमा
योजना पर ब्याज दरें 1.1 प्रतिशत
तक बढ़ जाएंगी। मासिक आय योजना
में भी 6.7 प्रतिशत की जगह अब
7.1 प्रतिशत ब्याज मिलेगा।
उल्लेखनीय है कि इस साल मई

हर तीन माह पर होती है दरों की समीक्षा

छोटी बचत पर दरें तय करने का अधिकार वित्त मंत्रालय का है और वह हर तीन माह पर इसकी समीक्षा करता है। पिछली बार करीब दो साल साल बाद सितंबर में दरें बढ़ाई गई थीं। छोटी बचत योजनाओं को तीन श्रेणी में डाला जाता है। पहली बचत योजना, दूसरी सामाजिक सुरक्षा योजना और तीसरी हर महीने वाली कमाई की योजना। इनमें कुल 12 योजनाएं आती हैं।

से अब तक रिजर्व बैंक रेपो दर में 2.25 फीसदी का इजाफा कर चुका है। वहीं बैंकों ने एफडी पर ब्याज दरों में 2.10 फीसदी तक इजाफा किया है। उसके मुकाबले छोटी बचत पर ब्याज दरें अभी तक 1.35 फीसदी तक ही बढ़ी हैं। छोटे निवेशकों को बचत के लिए आकर्षित करने के लिए काफी समय से विशेषज्ञ इसपर ब्याज दरें बढ़ाने का सुझाव दे रहे थे।

बुनियादी उद्योगों की वृद्धि दर बढ़कर 5.4 प्रतिशत

नई दिल्ली, एजेंसी। कोयला, उर्वरक, इस्पात, सीमेंट और बिजली क्षेत्रों के बेहतर प्रदर्शन से देश

झारखण्ड सरकार
स्वास्थ्य, चिकित्सा शिक्षा एवं परिवार कल्याण विभाग

सूचना

झारखण्ड लोक सेवा आयोग द्वारा चिकित्सा पदाधिकारी (मूल कोटि) सीधी एवं बैकलॉग के पद पर नियुक्ति हेतु विज्ञापन संख्या 07/2021 एवं 08/2021 के आलोक में अनुशंसित चिकित्सकों के प्रमाण पत्रों का सत्यापन दिनांक 26.12.2022 से 29.12.2022 तक निर्धारित था। उक्त निर्धारित तिथियों में जो उम्मीदवार उपस्थित नही हो सके है, उन्हें एतद् द्वारा अंतिम अवसर प्रदान करते हुए सूचित किया जाता है कि वे अपने प्रमाण पत्रों (यथा– शैक्षणिक प्रमाण पत्र, Internship प्रमाण–पत्र, चिकित्सीय निबंधन प्रमाण पत्र, आयु संबंधी प्रमाण–पत्र, आरक्षण संबंधी जाति प्रमाण पत्र एवं अन्य सभी आवश्यक तथा वांछित प्रमाण पत्र इत्यादि) का सत्यापन कराने हेतु दिनांक 05.01.2023 को स्वास्थ्य निदेशालय, नामकुम, रांची (नामकुम डाकघर के निकट) में उपस्थित होना सुनिश्चित करेंगे। अन्यथा यह माना जायेगा कि आप उक्त पद पर सेवा देने के लिए इच्छुक नही है।

(प्रमुनाथ भामी)
सरकार के अवर सचिव, स्वास्थ्य, चिकित्सा शिक्षा एवं परिवार कल्याण विभाग, झारखण्ड।

PR 286379 Health Med Edu and Family Welfare(22-23)#D

SWACHH SURVEKSHAN 2023

कार्यालय नगर पंचायत, जामताड़ा
Email Id- Jamtaranagarpanchayat@gmail.com

!! आम सूचना !!

एतद् द्वारा सर्वसाधारण को सूचित किया जाता है कि वन, पार्यवरण एंव जलवायु परिवर्त्तन मंत्रालय, भारत सरकार के द्वारा अधिसूचित Plastic waste management (amendment) Rules 2021 के प्रावधान के अन्तर्गत नगर पंचायत, जामताड़ा क्षेत्र में 75 microns thickness से कम के प्लास्टिक कैरी बैग निर्माण, आयात, स्टाकिंग, डिस्ट्रीब्युसन, ब्रिकी एवं उपयोग को प्रतिबंधित किया गया है।

अतः सूचित किया जाता है कि प्लास्टिक के स्थान पर जूट, कागज या कपड़े के थैले का उपयोग करें। थर्मोकॉल से बने थाली एवं प्लेट में भोजन करने से कैंसर जैसे विविध असाध्य बीमारियों के होने की प्रबल संभावना रहती है, इसलिए इसके स्थान पर साल आदि के पत्तों से निर्मित पत्तल एवं प्लेट का उपयोग किया जाय। किसी भी दुकानदार के पास प्लास्टिक कैरी बैग हो तो वे यथाशीघ्र नगर पंचायत, जामताड़ा कार्यालय में आकर उसे जमा कर दें और सरकार की प्लास्टिक मुक्त जामताड़ा मुहिम में सहयोग करें। प्लास्टिक कैरी बैग के निर्माण, आयात, स्टाकिंग, डिस्ट्रीब्युसन, ब्रिकी या उपायोग करते हुए पाये जाने पर उपयोगकर्ता, दुकानदार एवं अन्य व्यापारी वर्ग के विरूद्ध प्लास्टिक अपशिष्ट प्रबंधन नियम तथा नगरपालिका अधिनियम की सुसंगत धाराओं के तहत् आर्थिक दंड के साथ–साथ विधिसम्मत कड़ी कार्रवाई की जाएगी।

कार्यपालक पदाधिकारी,
नगर पंचायत, जामताड़ा

PR 286324 (Urban Development and Housing) 22-23 (D)

झारखंड सरकार
ग्रामीण कार्य विभाग, कार्यपालक अभियंता का कार्यालय
कम्बाइंड बिल्डींग, ओल्ड चास कोट एरिया, बोकारो।

ई- निविदा आमंत्रण सूचना

ई–निविदा संख्या :- 28/2022-23/RWD/EE/BOKARO दिनांक –29.12.2022

कार्यपालक अभियंता, ग्रामीण कार्य विभाग, कार्य प्रमंडल, बोकारो द्वारा निम्न विवरण के अनुसार e-procurement पद्धति से निविदा आमंत्रित की जाती है।

1. कार्य का नाम :–

क्रम संख्या	आई.डी.नं. टिकेरान संख्या / पैकेज संख्या	कार्य का नाम	प्राक्कलित राशि (रूपये में) अंक में	अक्षर में	कार्य समाप्ति की तिथि
1	RWD/EE/ BOKARO/ 01/2022-	धलकारी दक्षिणी पं... रगनीडीह...			

झारखण्ड सरकार
खान एवं भुतत्व विभाग जिला खनन कार्यालय, धनबाद

आम सूचना
Draft DSR (बालू खनिज) की सूचना

एतद् द्वारा सूचित करना है कि धनबाद जिला हेतु Draft DSR (बालू खनिज) NABET Accredited Agency द्वारा तैयार किया गया है। Draft DSR (बालू खनिज) को NGT के Guidelines एवं Enforcement and Monitoring Guidelines for Sand Mining, 2020 के अनुसार Public Consultation हेतु जिला के बेवसाईट https://dhanbad.nic.in में Upload किया गया है, जो Public Domain पर 30 दिनों तक रहेगी।

अतः आमजनों से अनुरोध है कि तैयार Draft DSR (बालू खनिज) के बावत सुझाव एवं Comments उपायुक्त के कार्यालय अथवा जिला खनन कार्यालय, धनबाद में पत्र के माध्यम से भेजा जा सकता है।

ह0/–
जिला खनन पदाधिकारी,
धनबाद

PR 286361 (Mines and Geology)22-23*D

कार्यालय चास नगर निगम चास (बोकारो)

अति अल्प कालिन निविदा आमंत्रण सूचना सं0–05/2022–23

01. विज्ञापन दाता का नाम :– अपर नगर आयुक्त, चास नगर निगम।
02. परिमाण विपत्र बिक्री की तिथि एवं समय :– 10.01.2023 को 10:00 बजे से 2:00 बजे अपराह्न तक।
03. निविदा प्राप्त करने की तिथि एवं समय :– 12.01.2023 को 2:00 बजे अपराह्न तक।
04. निविदा खोलने का समय :– 12.01.2023 को 3:00 बजे अपराह्न तक।
05. निविदा खोलने का स्थान :– कार्यालय चास नगर निगम।
06. परिमाण विपत्र बिक्री का स्थान :– कार्यालय चास नगर निगम।
07. कार्यो की विवरणी

क्रम सं0	कार्य का नाम	प्राक्कलित राशि रु0 में	अग्रधन की राशि रु0 में	परिमाण विपत्र का मूल्य रु0 में	कार्य अवधि
01	ESTIMATE FOR CONSTRUCTION OF RCC DRAIN WITH COVER SLAB IN WARD NO 32 FROM TRILOCHAN MAHTHA HOUSE TO HOUSE OF PARWEEN CRPF IN CHAS MUNICIPAL CORPORATION.	509090.00	10500.00	5000.00	तीन माह
02	ESTIMATE FOR CONSTRUCTION OF RCC DRAIN WITH COVER SLAB IN WARD NO 32 FROM HOUSE OF PARWEEN CRPF TO BIG DRAIN SHIV MANDIR CHAS. MUNICIPAL CORPORATION	807128.00	16500.00	5000.00	तीन माह

प्राक्कलित राशि घट–बढ़ सकती है अतः परिमाण विपत्र खरीदने के पूर्व कार्यालय सूचनापट्ट पर प्रकाशित सूची के अनुसार ही अग्रधन देय होगा निविदा समिति के निर्णय को चुनौती नहीं दी जा सकती है। विशेश शर्त्त सूचना पट्ट पर देखी जा सकती है।

अपर नगर आयुक्त
चास नगर निगम।

PR.NO.286355 Urban Development(22-23):D

Jharkhand Urja Sancharan Nigam Ltd.
(CIN: U40108JH2013SGC001704)
Regd. Office: 2nd Floor, JUSNL (SLDC) Building Kusai Colony, Doranda, Ranchi - 834002
(E-mail:cetjusnl@gmail.com)

TENDER CANCELLATION NOTICE

Due to unavoidable circumstances, tender invited vide following NIT no. are hereby cancelled :-

NIT No.	Name of the works
32/PR/JUSNL/ 22-23	Design, Engineering, Supply, Erection, Testing and Commissioning of following work on turnkey basis :- (i) 400/220/132/33 kV, 2 x 500 + 2x200 +2x80 MVA Grid sub -station including construction of Control Room Building & approach road with other civil works at Koderma (ii) 400 kV D/C 3 Ph QM Patratu-Koderma Transmission line (150 Km.)
	Design, Engineering, Supply, Erection, Testing and Commissioning of following work on turnkey basis :-

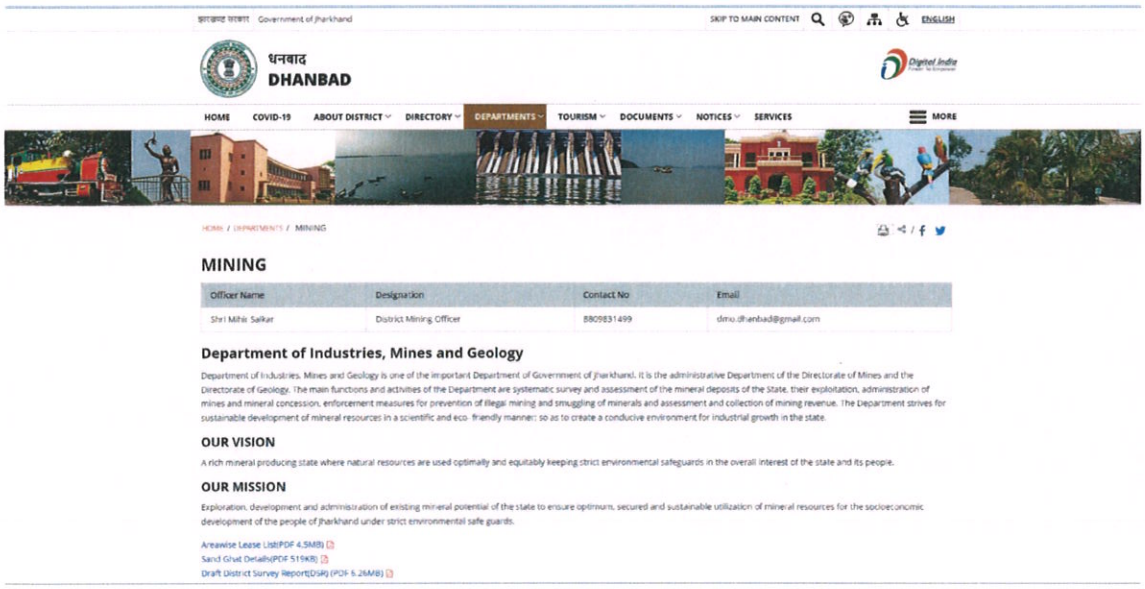
Jharkhand, Ranchi * State *

ANNEXURE-10

COPY OF NIC D.C. UPLOAD SCREEN SHOT

NIC UPLOAD

DSR REPORT



झारखण्ड सरकार Government of Jharkhand

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DHANBAD

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MINING

Officer Name	Designation	Contact No	Email
Shri Mihir Sarkar	District Mining Officer	8809831499	dmo.dhanbad@gmail.com

Department of Industries, Mines and Geology

Department of Industries, Mines and Geology is one of the important Department of Government of Jharkhand. It is the administrative Department of the Directorate of Mines and the Directorate of Geology. The main functions and activities of the Department are systematic survey and assessment of the mineral deposits of the State, their exploitation, administration of mines and mineral concession, enforcement measures for prevention of illegal mining and smuggling of minerals and assessment and collection of mining revenue. The Department strives for sustainable development of mineral resources in a scientific and eco- friendly manner; so as to create a conducive environment for industrial growth in the state.

OUR VISION

A rich mineral producing state where natural resources are used optimally and equitably keeping strict environmental safeguards in the overall interest of the state and its people.

OUR MISSION

Exploration, development and administration of existing mineral potential of the state to ensure optimum, secured and sustainable utilization of mineral resources for the socioeconomic development of the people of Jharkhand under strict environmental safe guards.

Areawise Lease List(PDF 4.5MB)
Sand Ghat Details(PDF 519KB)
Draft District Survey Report(DSR) (PDF 5.26MB)

State Level Environment Impact Assessment Authority
Approved
Jharkhand, Ranchi

ANNEXURE-11

COPY OF SUB-DIVISIONAL COMITTE LETTER

झारखण्ड सरकार

उपायुक्त का कार्यालय (खनन शाखा), धनबाद।

–:आदेश:–

मान्नीय सर्वोच्च न्यायालय, नई दिल्ली ने Civil Appeal No. 3661-3662/2020 State of Bihar & others Vrs. Pawan Kumar & others में पारित न्यायादेश दिनांक 10/11/2021 द्वारा बिहार राज्य हेतु DSR (बालू सहित) Sub-divisional समिति के माध्यम से तैयार करने की प्रक्रिया, जो मान्नीय राष्ट्रीय हरित अधिकरण, नई दिल्ली द्वारा O.A. No. 40/2020/EZ एवं 57/2020/EZ में दिनांक 14/10/2020 को पारित आदेश से स्पष्ट किया गया है। उक्त न्यायादेश की प्रयोज्यता झारखण्ड राज्य पर होने के सन्दर्भ में मान्नीय राष्ट्रीय हरित अधिकरण, इस्टर्न जोन बेंच, कोलकाता द्वारा O.A. No. 54/2022/EZ में दिनांक 05/09/2022 को पारित आदेश से स्पष्ट किया है।

धनबाद जिला हेतु बालू खनिज का Draft DSR चयनित M/s Atmos Sustainable Solutions Private Limited, द्वारा तैयार कर सहायक निदेशक, भूतत्व, भूतात्विक कार्यालय, बोकारो के माध्यम से उपलब्ध कराया गया है, जो Enforcement and Monitoring Guidelines for Sand Mining, 2020 के प्रावधानानुसार Public Comments हेतु जिले के NIC Portal पर uploaded है।

अतः मान्नीय सर्वोच्च न्यायालय, नई दिल्ली द्वारा पारित न्यायादेश के आलोक में धनबाद जिला हेतु Draft DSR (बालू सहित) को तैयार करने तथा उपलब्ध कराये गये Draft DSR का पुनरीक्षण (Vetting) Sustainable Sand Mining Management Guidelines, 2016 एवं Enforcement and Monitoring Guidelines for Sand Mining, 2020 के तहत करते हुए SEAC एवं SEIAA को Appraisal के लिए अग्रसारित करने हेतु निम्न रूप से समिति का गठन किया जाता है :–

1. वन प्रमण्डल पदाधिकारी, धनबाद वन प्रमण्डल, धनबाद।
2. अनुमण्डल पदाधिकारी, धनबाद।
3. जिला खनन पदाधिकारी, धनबाद।
4. सहायक निदेशक, भूतत्व, जिला भूतातविक कार्यालय, बोकारो।
5. कार्यपालक अभियंता, लघु सिंचाई प्रमण्डल, धनबाद।
6. क्षेत्रीय पदाधिकारी, झारखण्ड राज्य प्रदूषण नियंत्रण पार्षद, धनबाद।

जिला खनन पदाधिकारी, धनबाद को उक्त समिति में संयोजक के रूप में कार्य करने हेतु नामित किया जाता है।

Sd/–

उपायुक्त, धनबाद।

ज्ञापांक 3085 /एम0, दिनांक 28/11/2022

प्रतिलिपि:– सभी सदस्यों को सूचनार्थ एवं आवश्यक कार्रवाई हेतु प्रेषित।

28/11/22

उपायुक्त, धनबाद।

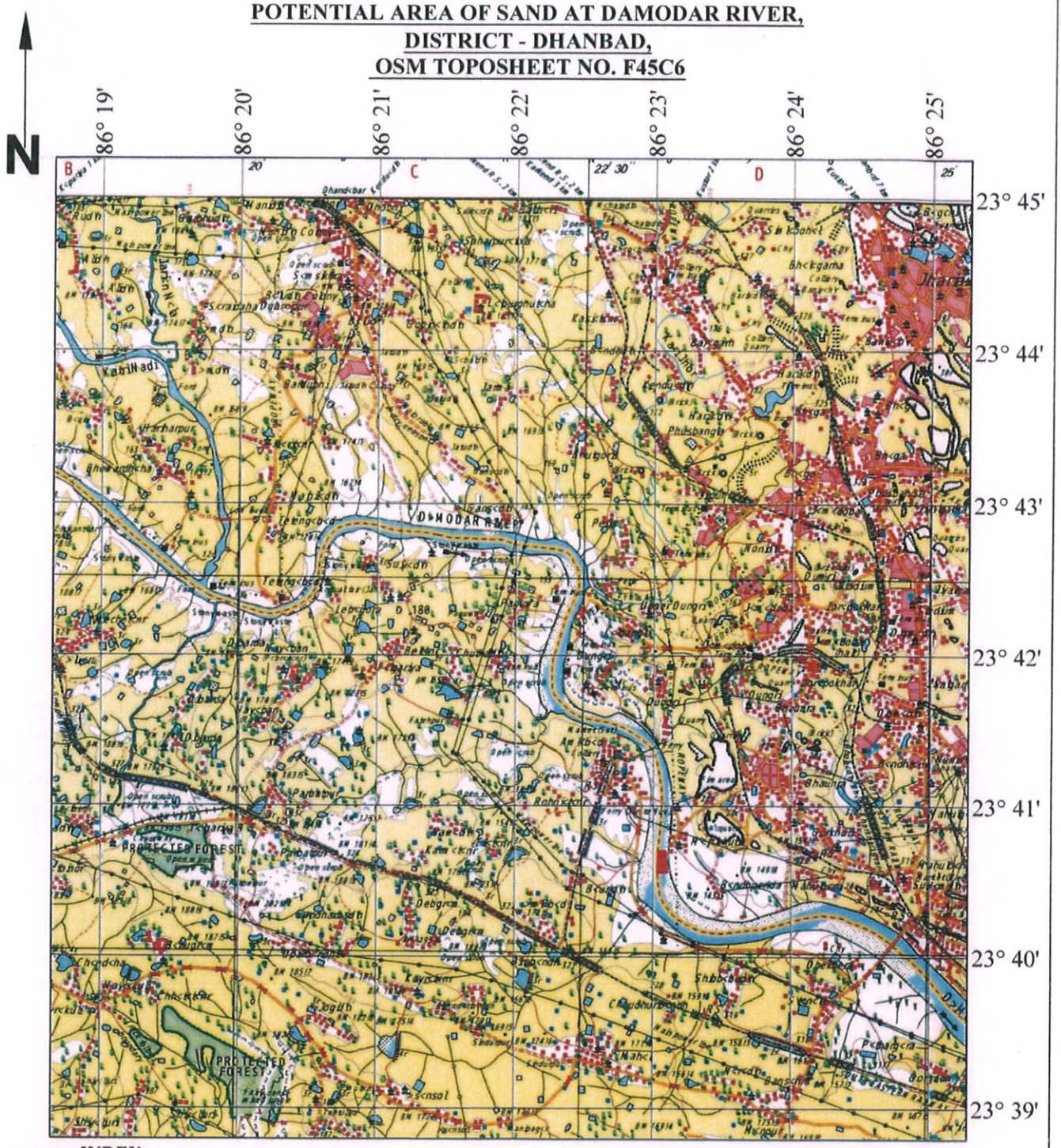
State Level Environment Impact Assessment Authority ★ Jharkhand ★ Approved

ANNEXURE-12

INDIVIDUAL TOPOSHEET MAP

OF SURVEY OF INDIA

POTENTIAL AREA OF SAND AT DAMODAR RIVER, DISTRICT - DHANBAD, OSM TOPOSHEET NO. F45C6



INDEX

PROPOSED POTENTIAL AREA

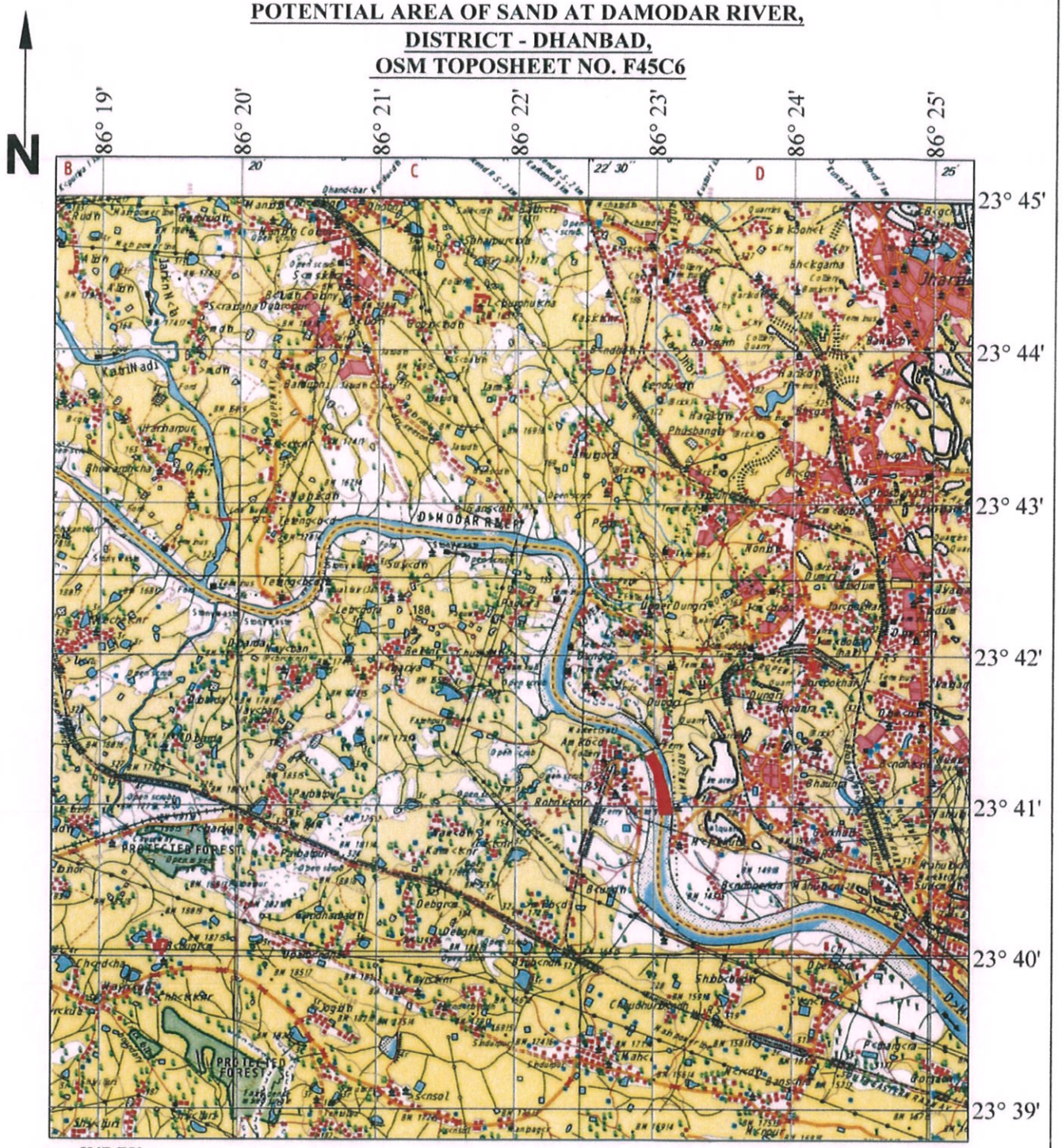
DR-4 AREA - 2.84 HA

SCALE - 1:1500

Express highway: with toll; with bridge; with distance stone
Roads, metalled: according to importance
Roads, double carriageway: according to importance
Unmetalled road. Cart-track. Pack-track with pass. Foot-path
Streams: with track in bed; undefined. Canal
Dams: masonry or rock-filled; earthwork. Weir
River: dry with water channel; with island & rocks. Tidal river
Submerged rocks. Shoal. Swamp. Reeds
Wells: lined; unlined. Tube-well. Spring. Tanks: perennial; dry
Embankments: road or rail; tank. Broken ground
Railways, broad gauge: double; single with station; under constrn.
Railways, other gauges: double; single with distance stone; do.
Mineral line or tramway. Kiln. Cutting with tunnel
Contours with sub-features. Rocky slopes. Cliffs
Sand features (1)flat. (2)sand-hills(permanent). (3)dunes(shifting)
Towns or Villages: inhabited; deserted. Fort
Huts: permanent; temporary. Tower. Antiquities
Temple. Chhatri. Church. Mosque. Idgah. Tomb. Graves
Lighthouse. Lightship. Buoys: lighted; unlighted. Anchorage
Huts: permanent; temporary. Tower. Antiquities
Temple. Chhatri. Church. Mosque. Idgah. Tomb. Graves
Lighthouse. Lightship. Buoys: lighted; unlighted. Anchorage
Mine. Vine on trellis. Grass. Scrub
Palms: palmyra; other. Plantain. Conifer. Bamboo. Other trees
Areas: cultivated; wooded. Surveyed tree
Boundary, international
state: demarcated; undemarcated
district; subdivision; tahsil or taluk; forest
Boundary pillars: surveyed; unlocated
Heights, triangulated; station; point; approximate
Bench-mark: geodetic; tertiary; canal
Post office. Telegraph office. Overhead tank
Rest house or Inspection bungalow. Circuit house. Police station
Camping ground. Forest: reserved; protected
Spaced names: administrative; locality or tribal
Hospital. Dispensary. Veterinary; Hospital / Dispensary
Aerodrome. Helipad. Tourist site
Power line: with pylons surveyed; with poles unsurveyed

Approved
State Level Environment Impact Assessment Authority (SEIAA) Jharkhand, Ranchi

POTENTIAL AREA OF SAND AT DAMODAR RIVER, DISTRICT - DHANBAD, OSM TOPOSHEET NO. F45C6



INDEX

PROPOSED POTENTIAL AREA

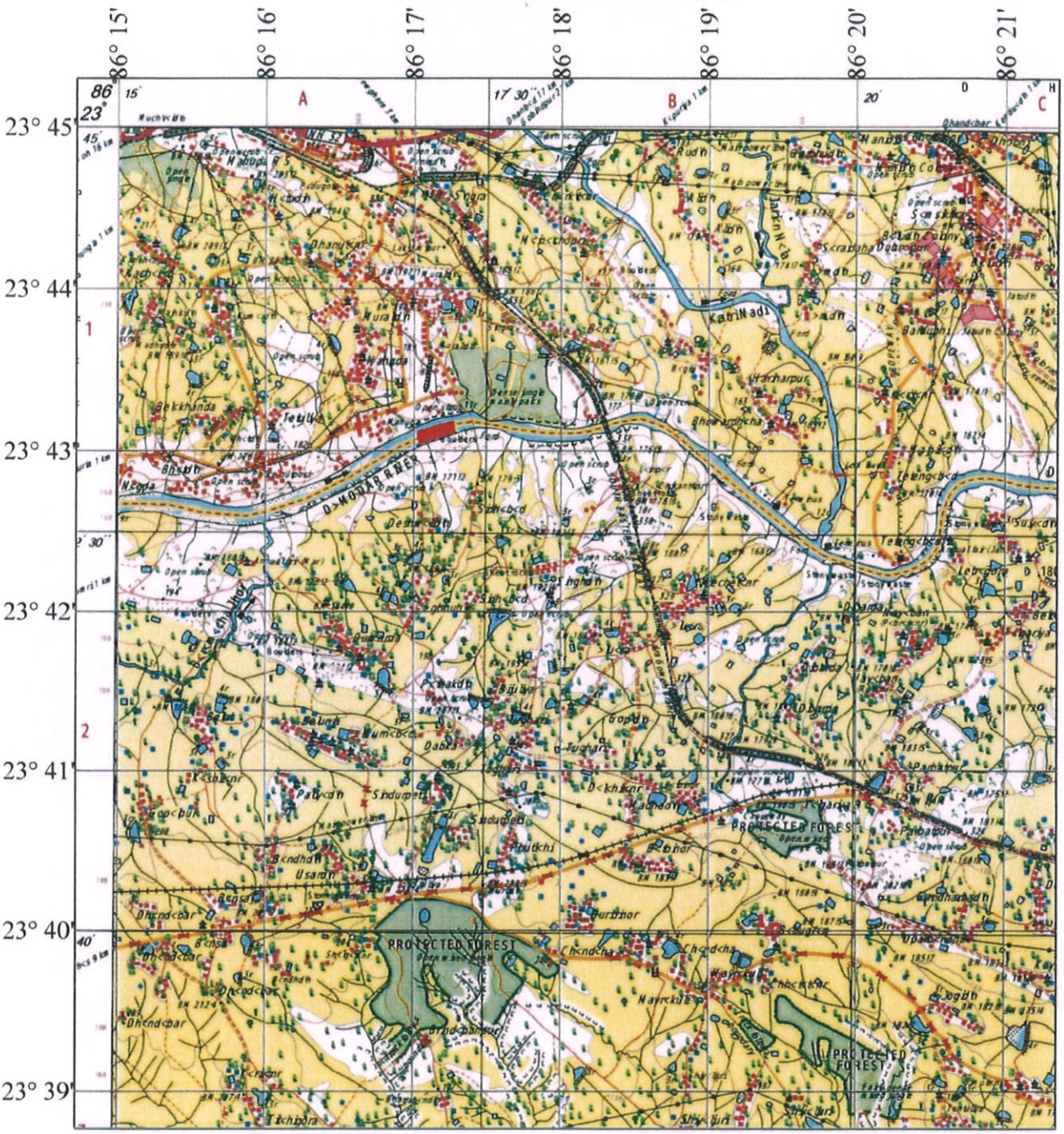
DR-5 AREA - 9.95 HA

SCALE - 1:1500

Express highway: with toll; with bridge; with distance stone
Roads, metalled: according to importance
Roads, double carriageway: according to importance
Unmetalled road. Cart-track. Pack-track with pass. Foot-path
Streams: with track in bed; undefined. Canal
Dams: masonry or rock-filled; earthwork. Weir
River: dry with water channel; with island & rocks. Tidal river
Submerged rocks. Shoal. Swamp. Reeds
Wells: lined; unlined. Tube-well. Spring. Tanks: perennial; dry
Embankments: road or rail; tank. Broken ground
Railways, broad gauge: double; single with station; under constrn.
Railways, other gauges: double, single with distance stone; do.
Mineral line or tramway. Kiln. Cutting with tunnel
Contours with sub-features. Rocky slopes. Cliffs
Sand features:(1)flat. (2)sand-hills(permanent). (3)dunes(shifting)
Towns or Villages: inhabited; deserted. Fort
Huts: permanent; temporary. Tower. Antiquities
Temple. Chhatri. Church. Mosque. Idgāh. Tomb. Graves
Lighthouse. Lightship. Buoys: lighted; unlighted. Anchorage
Huts: permanent; temporary. Tower. Antiquities
Temple. Chhatri. Church. Mosque. Idgāh. Tomb. Graves
Lighthouse. Lightship. Buoys: lighted; unlighted. Anchorage
Mine. Vine on trellis. Grass. Scrub
Palms: palmyra; other. Plantain. Conifer. Bamboo. Other trees
Areas: cultivated; wooded. Surveyed tree
Boundary: international
state: demarcated; undemarcated
district; subdivision; tahsil or tāluk; forest
Boundary pillars: surveyed; unlocated
Heights, triangulated: station; point; approximate
Bench-mark: geodetic; tertiary; canal
Post office. Telegraph office. Overhead tank
Rest house or Inspection bungalow. Circuit house. Police station
Camping ground. Forest: reserved; protected
Spaced names: administrative, locality or tribal
Hospital. Dispensary. Veterinary: Hospital / Dispensary
Aerodrome. Helipad. Tourist site
Power line: with pylons surveyed; with poles unsurveyed

State Level Environment Impact Assessment Authority * Jharkhand, Ranchi *
Approved

POTENTIAL AREA OF SAND AT DAMODAR RIVER, DISTRICT - DHANBAD, OSM TOPOSHEET NO. F45C6



INDEX

PROPOSED POTENTIAL AREA

DR-10 AREA - 4.52 HA

SCALE - 1:1500

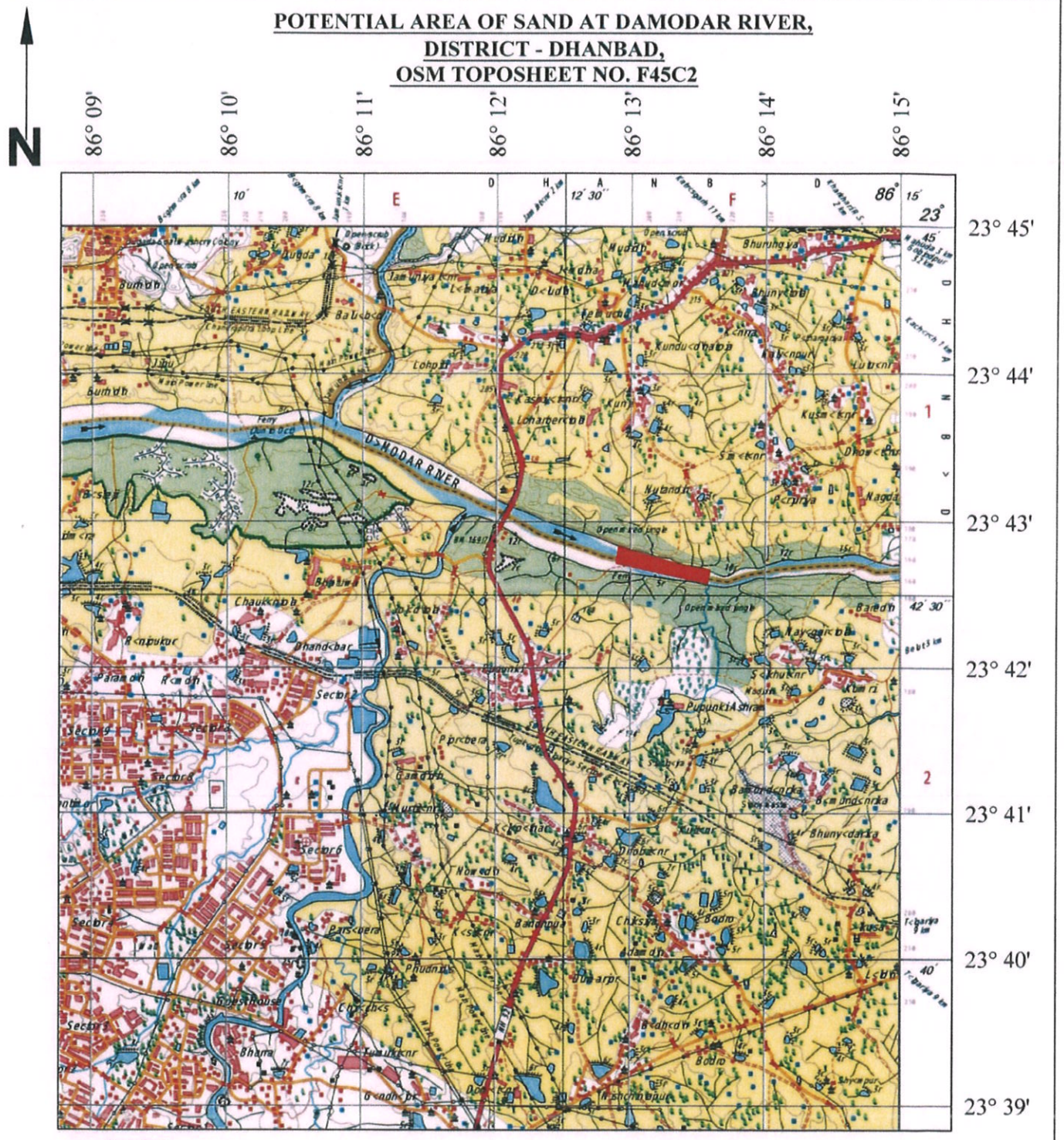
Approved

Jharkhand, Ranchi

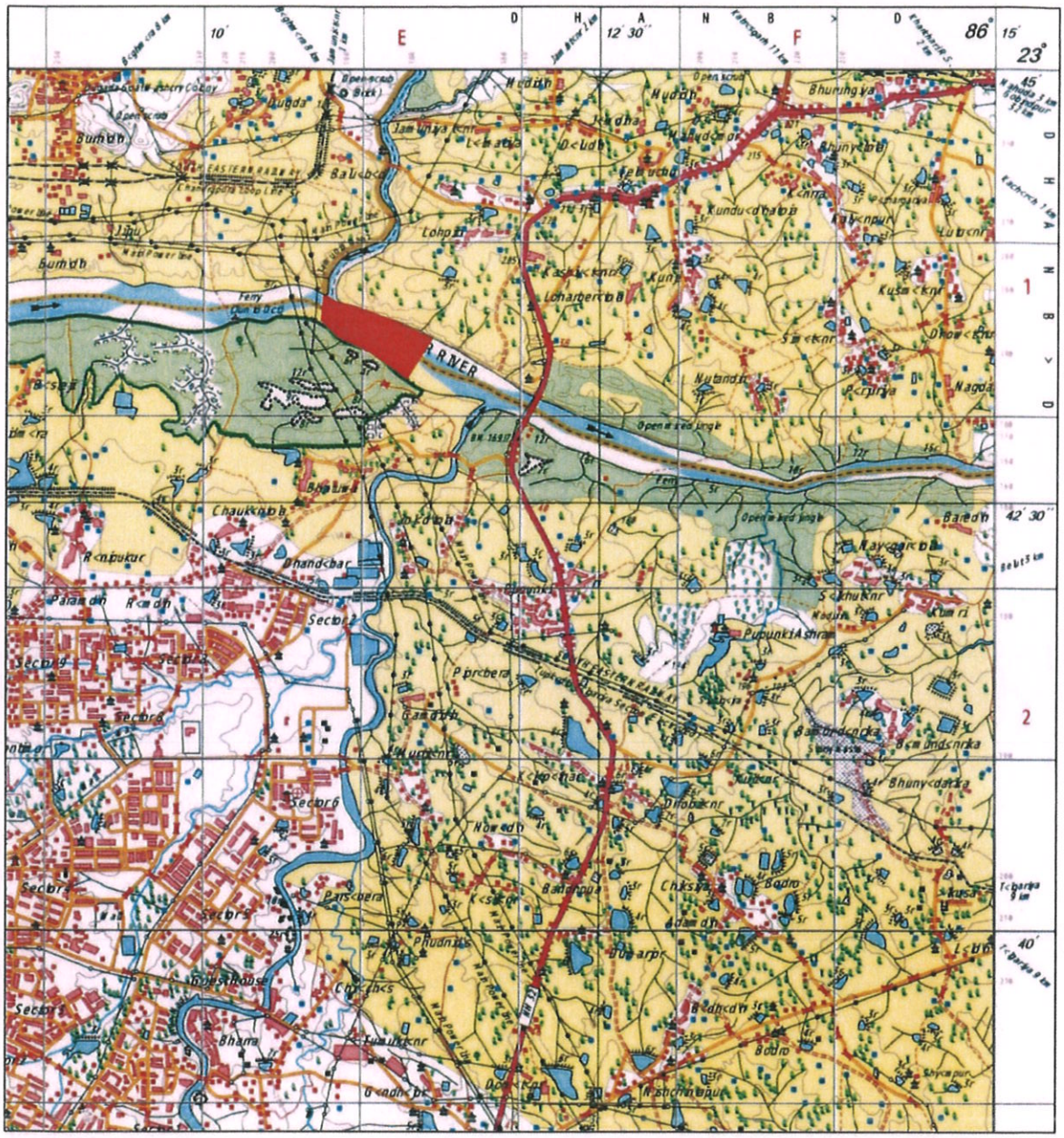
POTENTIAL AREA OF SAND AT DAMODAR RIVER, DISTRICT - DHANBAD, OSM TOPOSHEET NO. F45C2

N
86° 09'
86° 10'
86° 11'
86° 12'
86° 13'
86° 14'
86° 15'
23° 45'
23° 44'
23° 43'
23° 42'
23° 41'
23° 40'
23° 39'
DAMODAR RIVER
Sector 2
Sector 5
Sector 6
Sector 7
Sector 8
Sector 9
Pipunki Ashram
Bhuniya
Bhuniyadanga
Bhuniyadanka
Bhuniyadih
Bhuniyadihi
Bhuniyadihi Ashram
Bhuniyadihi Ashram
Bhuniyadihi Ashram

POTENTIAL AREA OF SAND AT DAMODAR RIVER, DISTRICT - DHANBAD, OSM TOPOSHEET NO. F45C2


N
86° 09'
86° 10'
86° 11'
86° 12'
86° 13'
86° 14'
86° 15'
23° 45'
23° 44'
23° 43'
23° 42'
23° 41'
23° 40'
23° 39'
DAMODAR RIVER
Sector 2
Sector 6
Sector 5
Sector 4
Sector 3
Sector 1
Pupunki Ashram
Bhuniyadanga
Chauk Math
Bhandabar
Nowadih
Badanpur
Phusro
Bhuna
Bodra
Baredih
Dhobadih
Jamunia Khas
Lohapatti
Kundu Chatra
Kusum Khas
Nayagarh
Pipra
Sijua Khas
Purbi Bera
Paschim Bera
Gamaria
Kapasara
Adardih
Chisra
Bhuniyadanga
Bansdanga
Bhuniyadanga
Bhuniyadanga
Bhuniyad

POTENTIAL AREA OF SAND AT DAMODAR RIVER, DISTRICT - DHANBAD, OSM TOPOSHEET NO. F45C2



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PROPOSED POTENTIAL AREA

DR-13 AREA - 45.00 HA

SCALE - 1:1500

Express highway: with toll, with bridge; with distance stone
Roads, metalled: according to importance
Roads, double carriageway: according to importance
Unmetalled road. Cart-track. Pack-track with pass. Foot-path
Streams: with track in bed; undefined. Canal
Dams: masonry or rock-filled; earthwork. Weir
River: dry with water channel; with island & rocks. Tidal river
Submerged rocks. Shoal. Swamp. Reeds
Wells: lined; unlined. Tube-well. Spring. Tanks: perennial; dry
Embankments: road or rail; tank. Broken ground
Railways, broad gauge: double; single with station; under constrn.
Railways, other gauges: double; single with distance stone; do.
Mineral line or tramway. Kiln. Cutting with tunnel
Contours with sub-features. Rocky slopes. Cliffs
Sand features (1)flat. (2)sand-hills(permanent). (3)dunes(shifting)
Towns or Villages: inhabited; deserted. Fort
Huts: permanent; temporary. Tower. Antiquities
Temple. Chhatri. Church. Mosque. Idgah. Tomb. Graves
Lighthouse. Lightship. Buoys: lighted; unlighted. Anchorage
Huts: permanent; temporary. Tower. Antiquities
Temple. Chhatri. Church. Mosque. Idgah. Tomb. Graves
Lighthouse. Lightship. Buoys: lighted; unlighted. Anchorage
Mine. Vine on trellis. Grass. Scrub
Palms: palmyra, other. Plantain. Conifer. Bamboo. Other trees
Actual: cultivated; wooded. Surveyed tree
Boundary: international
state: demarcated; undemarcated
district, subdivision; tahsil or taluk; forest
Boundary pillars: surveyed; unlocated
Heights: triangulated: station; point; approximate
Benchmark: trigonom. tertiary; canal
Post office. Telegraph office. Overhead tank
Rest house or Inspection Bungalow. Circuit house. Police station
Camping ground. Forest: reserved; protected
Spaced names: administrative; locality or tribal
Hospital. Dispensary. Veterinary: Hospital / Dispensary
Aerodrome. Helipad. Tourist site
Power line: with pylons surveyed; with poles unsurveyed

Regional Environment Impact Assessment Authority, Jharkhand, Ranchi

POTENTIAL AREA OF SAND AT DAMODAR RIVER, DISTRICT - DHANBAD, OSM TOPOSHEET NO. F45C14

INDEX

PROPOSED POTENTIAL AREA

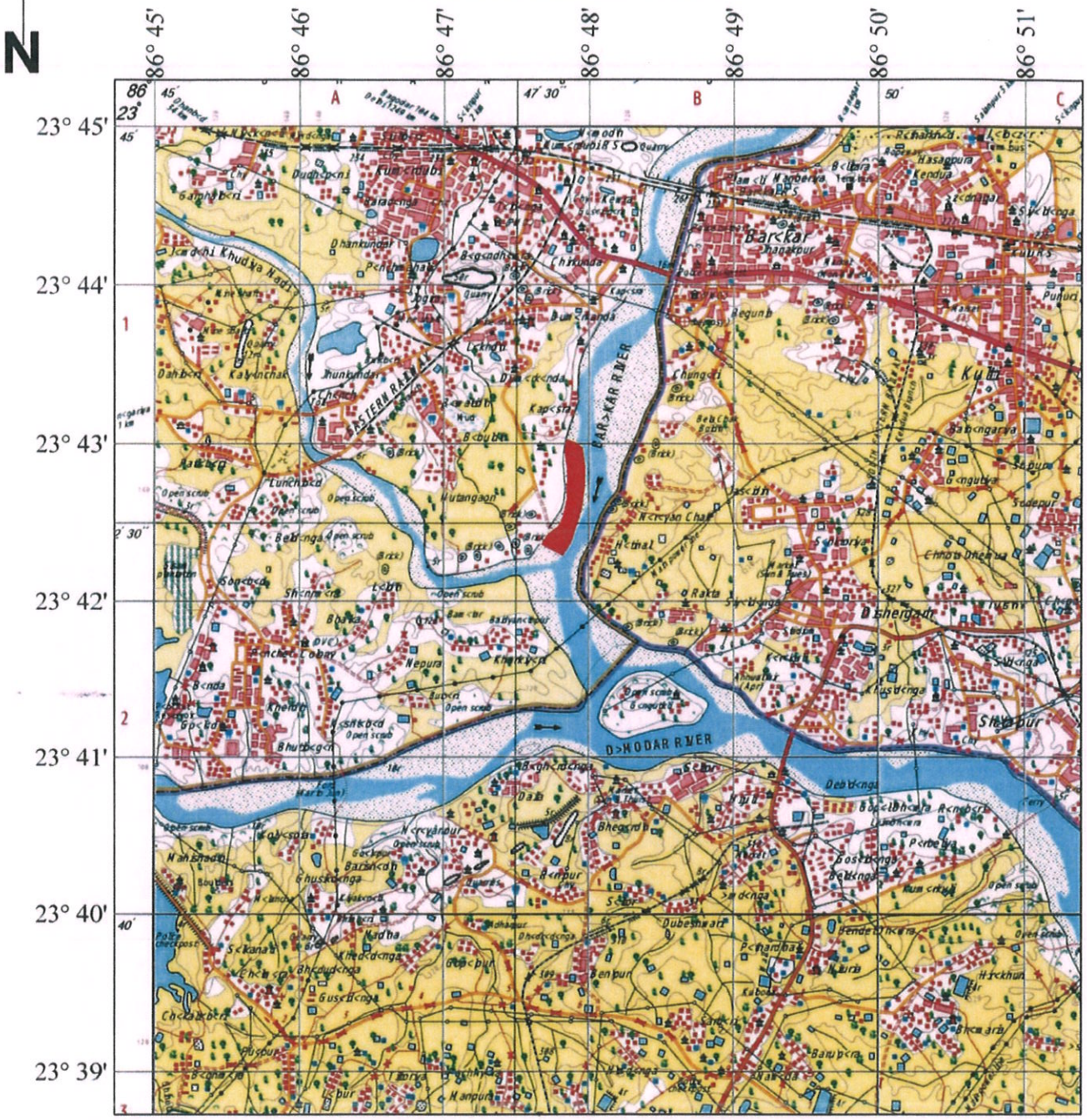
DR-14 AREA - 12.00 HA

SCALE - 1:1500

Express highway: with toll; with bridge; with distance stone
Roads, metalled: according to importance
Roads, double carriageway: according to importance
Unmetalled road. Cart-track. Pack-track with pass. Foot-path
Streams: with track in bed; undefined. Canal
Dams: masonry or rock-filled; earthwork. Weir
River: dry with water channel; with island & rocks. Tidal river
Submerged rocks. Shoal. Swamp. Reeds
Wells: lined; unlined. Tube-well. Spring. Tanks: perennial; dry
Embankments: road or rail; tank. Broken ground
Railways, broad gauge: double; single with station; under constrn.
Railways, other gauges: double; single with distance stone; do.
Mineral line or tramway. Kiln. Cutting with tunnel
Contours with sub-features. Rocky slopes. Cliffs
Sand features:(1)flat. (2)sand-hills(permanent). (3)dunes(shifting)
Towns or Villages: inhabited; deserted. Fort
Huts: permanent; temporary. Tower. Antiquities
Temple. Chhatri. Church. Mosque. Idgah. Tomb. Graves
Lighthouse. Lightship. Buoys: lighted; unlighted. Anchorage
Huts: permanent; temporary. Tower. Antiquities
Temple. Chhatri. Church. Mosque. Idgah. Tomb. Graves
Lighthouse. Lightship. Buoys: lighted; unlighted. Anchorage
Mine. Vine on trellis. Grass. Scrub
Palms, palmyra; other. Plantain. Conifer. Bamboo. Other trees
Areas: cultivated; wooded. Surveyed tree
Boundary: international
state: demarcated; undemarcated
district; subdivision; tahsil or taluk; forest
Boundary pillars: surveyed; unlocated
Heights: triangulated: station; point; approximate
Bench-marks: geodetic; tertiary; canal
Post office. Telegraph office. Dak bungalow
Rest house or Inspection bungalow. Circuit house. Police station
Camping ground. Forest: reserved; protected
Spaced names: administrative; locality or tribal
Hospital. Dispensary. Veterinary: Hospital / Dispensary
Aerodrome. Helipad. Tourist site
Power line: with pylons surveyed; with poles unsurveyed

Jharkhand Environment Management & Assessment Authority
Ranchi

POTENTIAL AREA OF SAND AT DAMODAR RIVER, DISTRICT - DHANBAD, OSM TOPOSHEET NO. F45C14



INDEX

PROPOSED POTENTIAL AREA

DR-15 AREA - 25.70 HA

SCALE - 1:1500

Express highway: with toll; with bridge; with distance stone
Roads, metalled: according to importance
Roads, double carriageway: according to importance
Unmetalled road. Cart-track. Pack-track with pass. Foot-path
Streams: with track in bed; undefined. Canal
Dams: masonry or rock-filled; earthwork. Weir
River: dry with water channel; with island & rocks. Tidal river
Submerged rocks. Shoal. Swamp. Reeds
Wells: lined; unlined. Tube-well. Spring. Tanks: perennial; dry
Embankments: road or rail; tank. Broken ground
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Railways, other gauges: double; single with distance stone; do.
Mineral line or tramway. Kiln. Cutting with tunnel
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Sand features (1)flat. (2)sand-hills(permanent). (3)dunes(shifting)
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Lighthouse. Lightship. Buoys: lighted; unlighted. Anchorage
Huts: permanent; temporary. Tower. Antiquities
Temple. Chhatri. Church. Mosque. Idgāh. Tomb. Graves
Lighthouse. Lightship. Buoys; lighted; unlighted. Anchorage
Mine. Vine on trellis. Grass. Scrub
Palms: palmyra; other. Plantain. Conifer. Bamboo. Other trees
Areas: cultivated; wooded. Surveyed tree
Boundary, international
state: demarcated; undemarcated
district; subdivision; tahsil or tāluk; forest
Boundary pillars: surveyed; unlocated
Heights, triangulated: station; point; approximate
Bench-mark: geodetic; tertiary; canal
Post office. Telegraph office. Overhead tank
Rest house or Inspection bungalow. Circuit house. Police station
Camping ground. Forest: reserved, protected
Spaced names: administrative; locality or tribal
Hospital. Dispensary. Veterinary: Hospital / Dispensary
Aerodrome. Helipad. Tourist site
Power line: with pylons surveyed; with poles unsurveyed

Approved
State Jharkhand, Ranchi

POTENTIAL AREA OF SAND AT JAMUNIYA RIVER, DISTRICT - DHANBAD, OSM TOPOSHEET NO. F45C1

INDEX

PROPOSED POTENTIAL AREA

JM-16 AREA - 4.13 HA

SCALE - 1:1500

Approved
State Level Impact Assess
Jharkhand, Ranchi

POTENTIAL AREA OF SAND AT JAMUNIYA RIVER, DISTRICT - DHANBAD, OSM TOPOSHEET NO. F45C9

INDEX

PROPOSED POTENTIAL AREA

BR-17 AREA - 2.74 HA

SCALE - 1:1500

Express highway: with toll; with bridge; with distance stone
Roads, metalled: according to importance
Roads, double carriageway: according to importance
Unmetalled road. Cart-track. Pack-track with pass. Foot-path
Streams: with track in bed; undefined. Canal
Dams: masonry or rock-filled; earthwork. Weir
River: dry with water channel; with island & rocks. Tidal river
Submerged rocks. Shoal. Swamp. Reeds
Wells: lined; unlined. Tube-well. Spring. Tanks: perennial; dry
Embankments: road or rail; tank. Broken ground
Railways, broad gauge: double; single with station, under constrn.
Railways, other gauges: double; single with distance stone; do.
Mineral line or tramway. Kiln. Cutting with tunnel
Contours with sub-features. Rocky slopes. Cliffs
Sand features: (1)flat. (2)sand-hills(permanent). (3)dunes(shifting)
Towns or Villages: inhabited; deserted. Fort
Huts: permanent; temporary. Tower. Antiquities
Temple. Chhatri. Church. Mosque. Idgāh. Tomb. Graves
Lighthouse. Lightship. Buoys: lighted; unlighted. Anchorage
Mine. Vine on trellis. Grass. Scrub
Palms: palmyra; other. Plantain. Conifer. Bamboo. Other trees
Areas: cultivated; wooded. Surveyed tree
Boundary, international
State: demarcated; undemarcated
District; subdivison; tahsil or tāluk; forest
Boundary pillars: surveyed; unlocated
Heights: triangulated; station; point; approximate
Benchmark: geodetic; tertiary; canal
Post office. Telegraph office. Overhead tank
Rest house or Inspection bungalow. Circuit house. Police station
Camping ground. Forest: reserved; protected
Spaced names: administrative; locality or tribal
Hospital. Dispensary. Veterinary: Hospital / Dispensary
Aerodrome. Helipad. Tourist site
Power line: with pylons surveyed; with poles unsurveyed

Environment Impact Assessment Authority
Ranchi

ANNEXURE-13

COMPOSITE MAP OF TOPOSHEET MAP OF SURVEY OF INDIA

COMPOSITE TOPOSHEET OF DHANBAD DISTRICT POTENTIAL AREA OF SAND AT DAMODAR, KHUDIA, BARAKAR & JAMUNIYA RIVER
OSM TOPOSHEET NO. F45C1, F45C5, F45C9, F45C2, F45C6, F45C10 & F45C14

SI. NO.	RIVER	UIN
1	DAMODAR RIVER	DR1
2	DAMODAR RIVER	DR2
3	DAMODAR RIVER	DR3
4	DAMODAR RIVER	DR4
5	DAMODAR RIVER	DR5
6	DAMODAR RIVER	DR6
7	DAMODAR RIVER	DR7
8	DAMODAR RIVER	DR8
9	DAMODAR RIVER	DR9
10	DAMODAR RIVER	DR10
11	DAMODAR RIVER	DR11
12	DAMODAR RIVER	DR12
13	DAMODAR RIVER	DR13
14	KHUDIA RIVER	KH14
15	BARAKAR RIVER	BR15
16	JAMUNIA RIVER	JM16
17	BARAKAR RIVER	BR17

SCALE : 1:2500

00 50 100 150 200 250 300

Scale 1:50,000

F45C1 (73I/1)	F45C5 (73I/5)	F45C9 (73I/9)	
F45C2 (73I/2)	F45C6 (73I/6)	F45C10 (73I/10)	F45C14 (73I/14)

INDEX
PROPOSED POTENTIAL AREA

Express highway: with toll; with bridge; with distance stone.....
Roads, metalled: according to importance.....
Roads, double carriageway: according to importance.....
Unmetalled road, Cart-track, Pack-track with pass, Foot-path.....
Streams: with track in bed; undefined, Canal.....
Dams: masonry or rock-filled, earthwork, Weir.....
River: dry with water channel, with island & rocks, Tidal river.....
Submerged rocks, Shoal, Swamp, Reeds.....
Wells: lined; unlined, Tube-well, Spring, Tanks: perennial; dry.....
Embankments: road or rail, tank, Broken ground.....
Railways, broad gauge: double, single with station, under constn.....
Railways, other gauges: double, single with distance stone, do.....
Mineral line or tramway, Kiln, Cutting with tunnel.....
Contours with sub-features, Rocky slopes, Cliffs.....
Sand features (1)flat, (2)sand-hills(permanent), (3)dunes(shifting).....
Towns or Villages: inhabited, deserted, Fort.....
Huts: permanent; temporary, Tower, Antiquities.....
Temple, Chhatri, Church, Mosque, Idgah, Tomb, Graves.....
Lighthouse, Lightship, Buoys: lighted; unlighted, Anchorage.....
Mine, Vine on trellis, Grass, Scrub.....
Palms: palmyra; other, Plantain, Conifer, Bamboo, Other trees.....
Areas: cultivated; wooded, Surveyed tree.....
Boundary, international.....
" state: demarcated; undemarcated.....
" district; subdivision; tehsil or taluk; forest.....
Boundary pillars: surveyed; unlocated.....
Heights, triangulated: station; point; approximate.....
Bench-mark: geodetic; tertiary; canal.....
Post office, Telegraph office, Overhead tank.....
Rest house or Inspection bungalow, Circuit house, Police station.....
Camping ground, Forest: reserved; protected.....
Spaced names: administrative; locality or tribal.....
Hospital, Dispensary, Veterinary; Hospital / Dispensary.....
Aerodrome, Helipad, Tourist site.....
Power line: with pylons surveyed, with poles unsurveyed.....

ANNEXURE-14

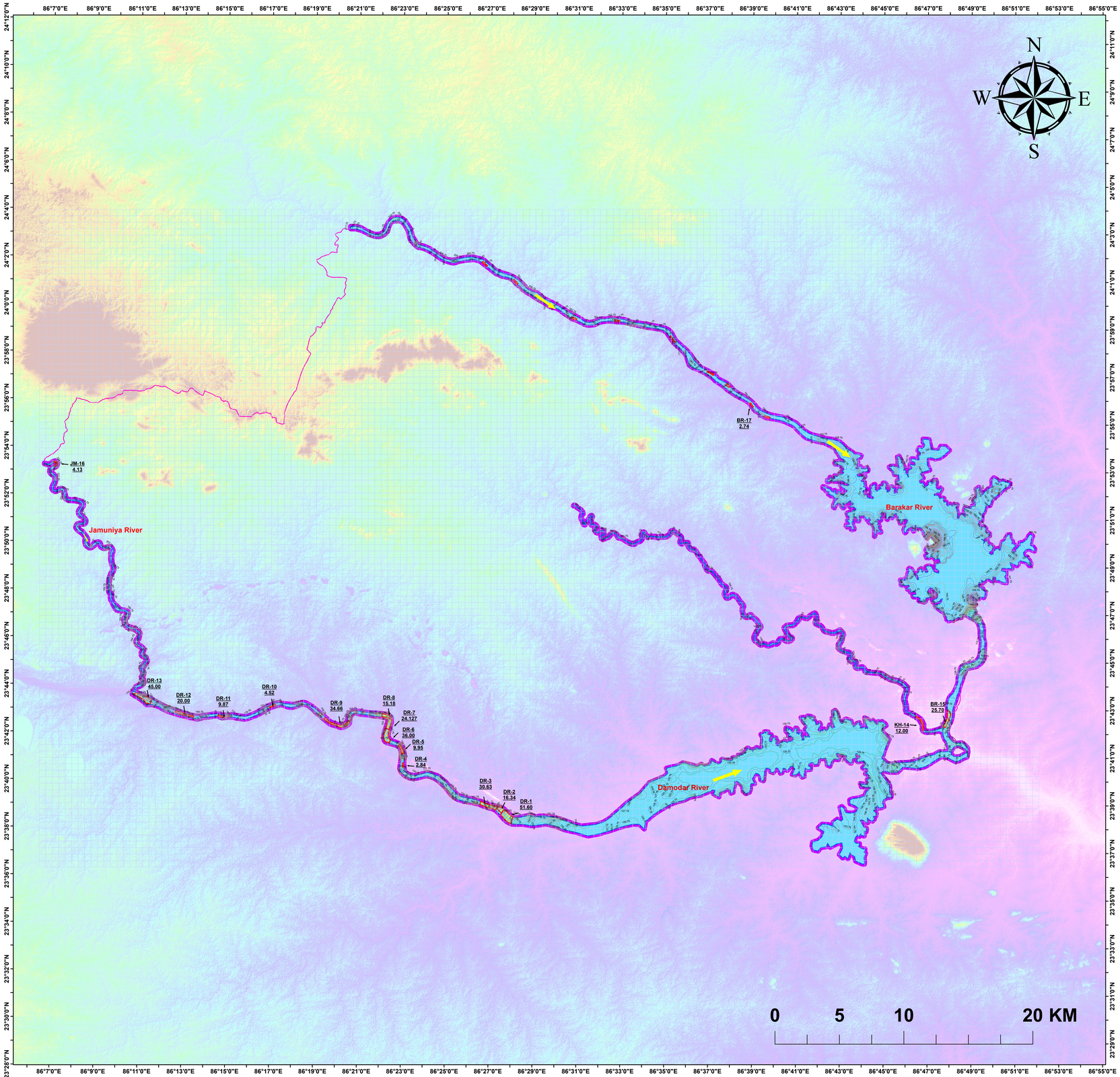
SATELLITE MAP OF PRE-MONSOON AND POST-MONSOON MAP

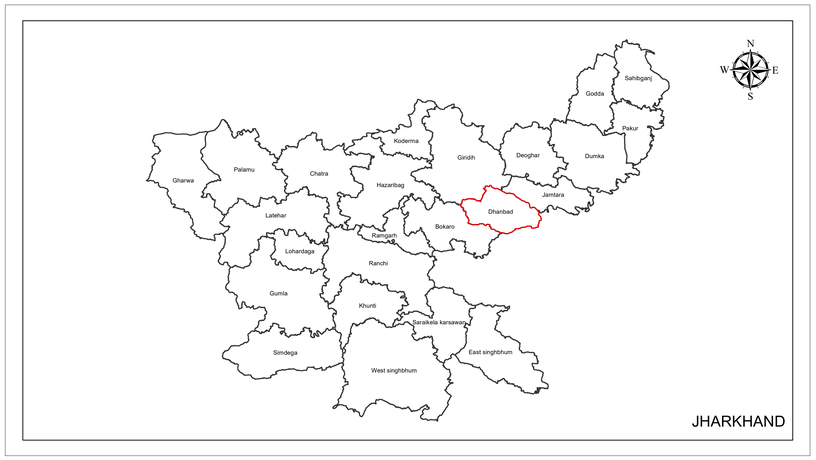
&

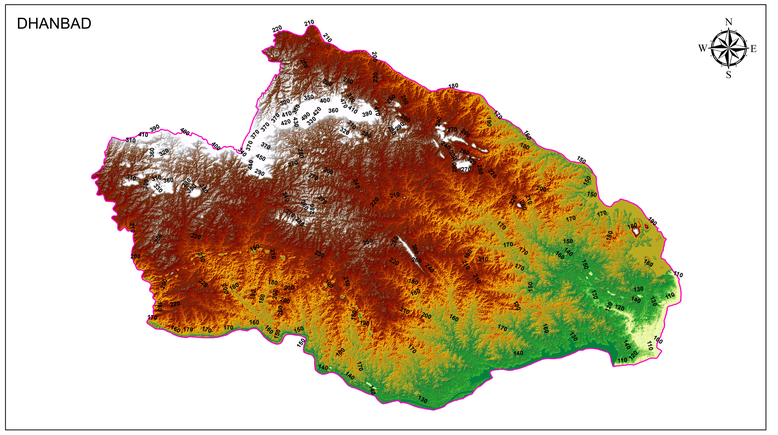
ZONE WISE

State Level Environment Impact Assessment Authority Jharkhand, Ranchi
Approved

COMPOSITE CONTOUR MAP OF DHANBAD DISTRICT WITH GRID INTERVAL 500mX500m







Legend

- Proposed Potential Area
- Damodar River Barakar River Jamuniya River
- Flow Direction of River
- Dhanbad District Boundary
- River Buffer

RIVER LENGTH -
Jamuniaya 26.5KM
Barakar 75KM
Damodar 73KM
Khudiya 49KM

Contour Interval 1m

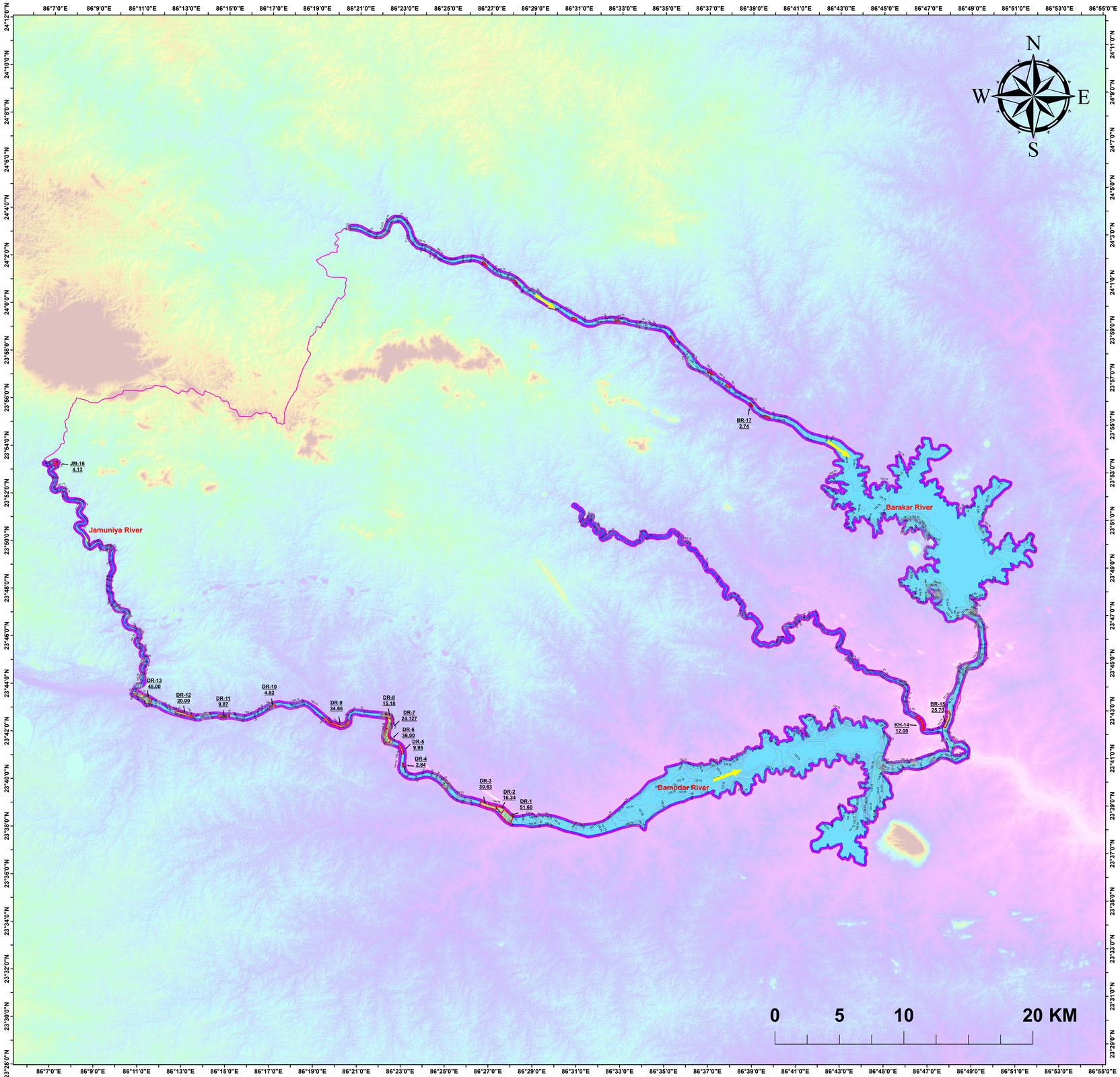
92.75	104.75	119.75	134.75	149.75	164.75	179.75	194.75	209.75	224.75
93.75	105.75	120.75	135.75	150.75	165.75	180.75	195.75	210.75	225.75
94.75	106.75	121.75	136.75	151.75	166.75	181.75	196.75	211.75	226.75
95.75	107.75	122.75	137.75	152.75	167.75	182.75	197.75	212.75	227.75
96.75	108.75	123.75	138.75	153.75	168.75	183.75	198.75	213.75	228.75
97.75	109.75	124.75	139.75	154.75	169.75	184.75	199.75	214.75	229.75
98.75	110.75	125.75	140.75	155.75	170.75	185.75	200.75	215.75	230.75
99.75	111.75	126.75	141.75	156.75	171.75	186.75	201.75	216.75	231.75
100.75	112.75	127.75	142.75	157.75	172.75	187.75	202.75	217.75	232.75
101.75	113.75	128.75	143.75	158.75	173.75	188.75	203.75	218.75	233.75
102.75	114.75	129.75	144.75	159.75	174.75	189.75	204.75	219.75	234.75
103.75	115.75	130.75	145.75	160.75	175.75	190.75	205.75	220.75	235.75
	116.75	131.75	146.75	161.75	176.75	191.75	206.75	221.75	236.75
	117.75	132.75	147.75	162.75	177.75	192.75	207.75	222.75	237.75
	118.75	133.75	148.75	163.75	178.75	193.75	208.75	223.75	238.75
									239.75

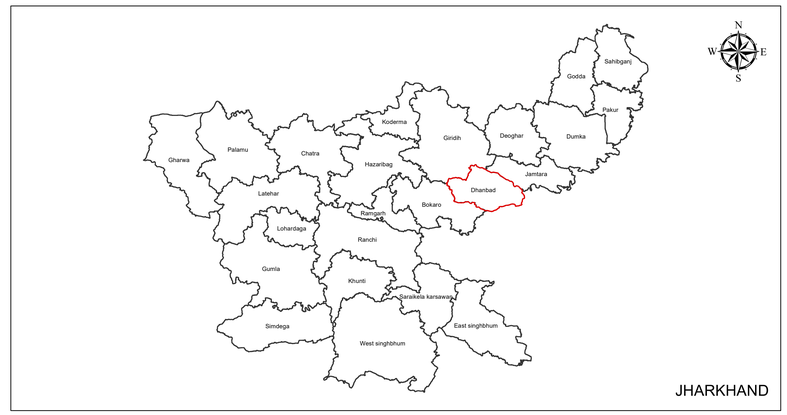
Source:SRTM DEM
and USGS Earth Explorer

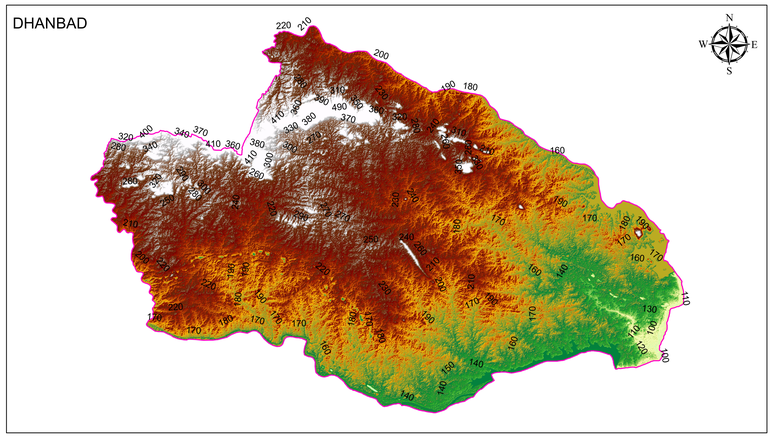
Submitted to:
State Level Environment Impact Assesment Authority, Ranchi Jharkhand

Prepared by:
ATOMS SUSTAINABLE SOLUTION PVT LTD
A-73, 3rd Floor, Sector Noida, UTTAR PRADESH
QCI NAABET ACCREDATION NO: NABET/EAI/2023/IA0063

COMPOSITE CONTOUR MAP OF DHANBAD DISTRICT WITH PRE MONSOON (APRIL 2022)







Legend

- Proposed Potential Area
- Damodar River Barakar River Jamuniya River
- Flow Direction of River
- Dhanbad District Boundary
- River Buffer

RIVER LENGTH -
Jamuniaya 26.5KM
Barakar 75KM
Damodar 73KM
Khudiya 49KM

Contour Interval 1m

93.75	105.75	120.75	135.75	150.75	165.75	180.75	195.75	210.75	225.75
94.75	106.75	121.75	136.75	151.75	166.75	181.75	196.75	211.75	226.75
95.75	107.75	122.75	137.75	152.75	167.75	182.75	197.75	212.75	227.75
96.75	108.75	123.75	138.75	153.75	168.75	183.75	198.75	213.75	228.75
97.75	109.75	124.75	139.75	154.75	169.75	184.75	199.75	214.75	229.75
98.75	110.75	125.75	140.75	155.75	170.75	185.75	200.75	215.75	230.75
99.75	111.75	126.75	141.75	156.75	171.75	186.75	201.75	216.75	231.75
100.75	112.75	127.75	142.75	157.75	172.75	187.75	202.75	217.75	232.75
101.75	113.75	128.75	143.75	158.75	173.75	188.75	203.75	218.75	233.75
102.75	114.75	129.75	144.75	159.75	174.75	189.75	204.75	219.75	234.75
103.75	115.75	130.75	145.75	160.75	175.75	190.75	205.75	220.75	
104.75	116.75	131.75	146.75	161.75	176.75	191.75	206.75	221.75	
	117.75	132.75	147.75	162.75	177.75	192.75	207.75	222.75	
	118.75	133.75	148.75	163.75	178.75	193.75	208.75	223.75	
	119.75	134.75	149.75	164.75	179.75	194.75	209.75	224.75	

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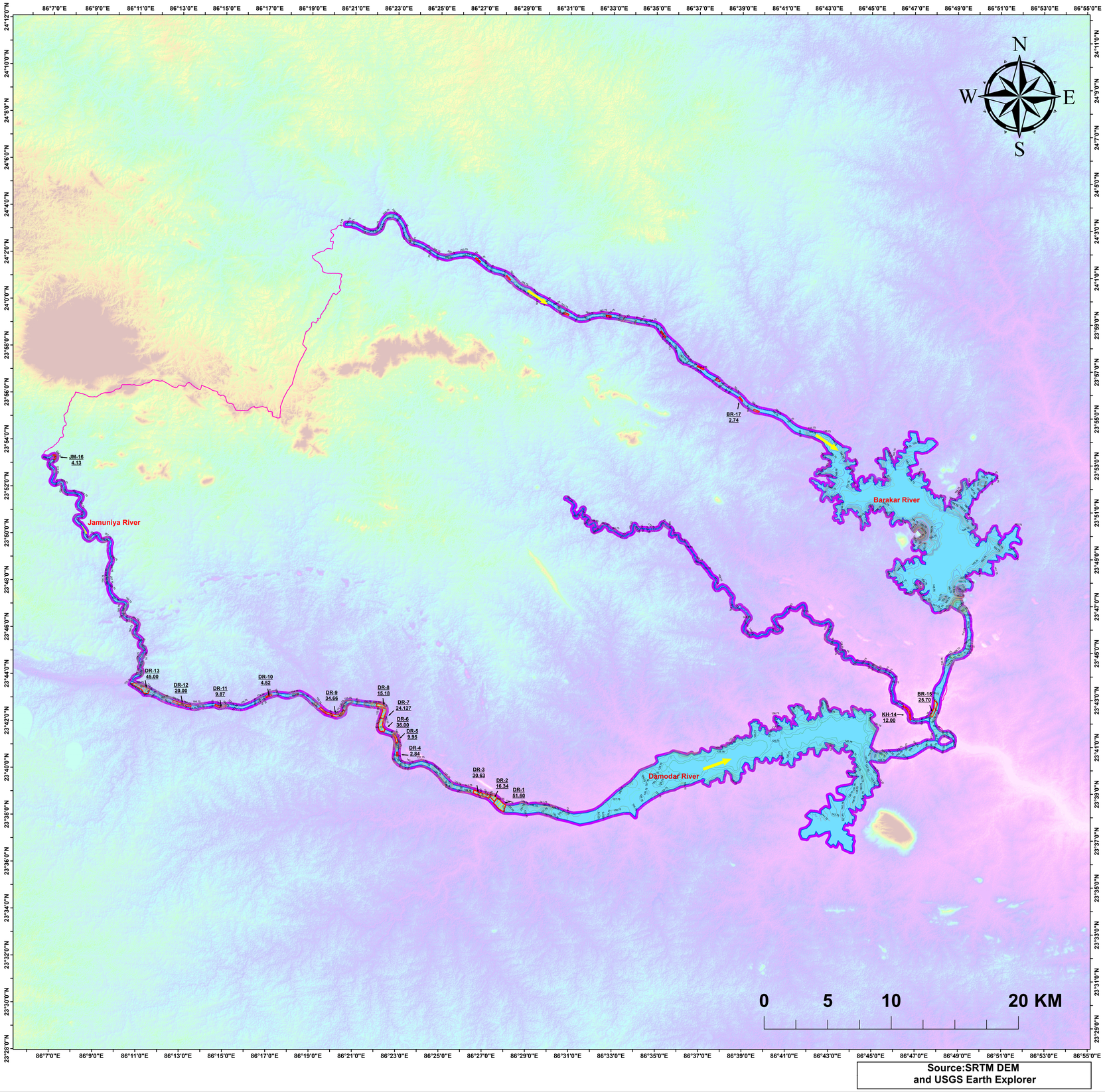
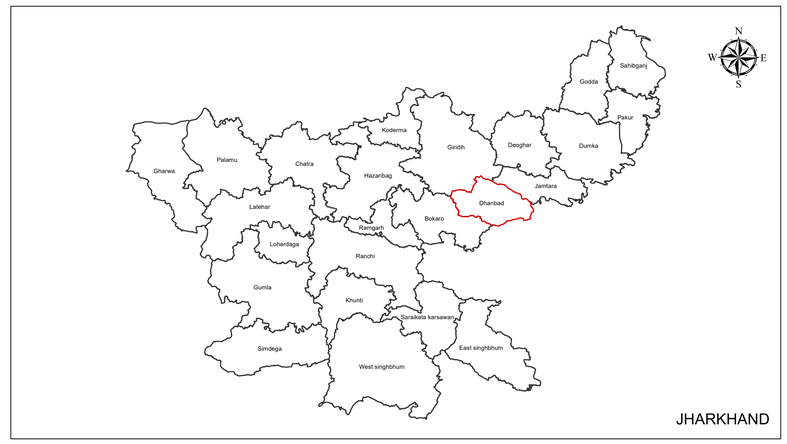
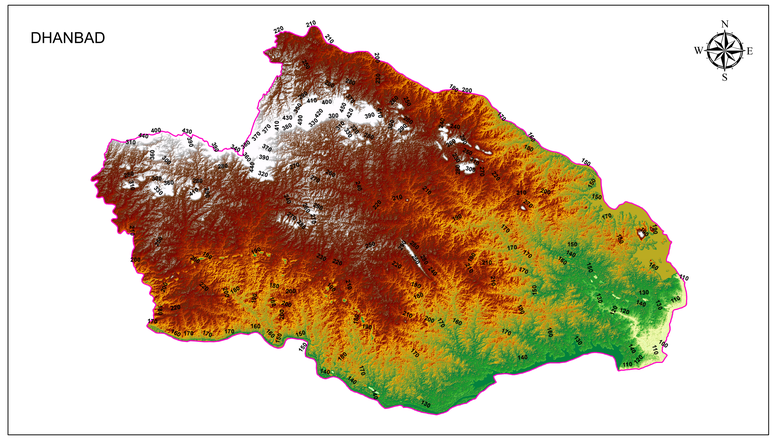
A-73, 3rd Floor, Sector Noida, UTTAR PRADESH
QCI NAABET ACCREDATION NO: NABET/EAI/2023/IA0063

COMPOSITE CONTOUR MAP OF DHANBAD DISTRICT WITH POST MONSOON (NOV 2022- JAN 2023)



Source:SRTM DEM
and USGS Earth Explorer





Legend

- Proposed Potential Area
- Damodar River Barakar River Jamuniya River
- Flow Direction of River
- Dhanbad District Boundary
- River Buffer

RIVER LENGTH -
Jamuniaya 26.5KM
Barakar 75KM
Damodar 73KM
Khudiya 49KM

Contour Interval 1m

92.75	104.75	119.75	134.75	149.75	164.75	179.75	194.75	209.75	224.75
93.75	105.75	120.75	135.75	150.75	165.75	180.75	195.75	210.75	225.75
94.75	106.75	121.75	136.75	151.75	166.75	181.75	196.75	211.75	226.75
95.75	107.75	122.75	137.75	152.75	167.75	182.75	197.75	212.75	227.75
96.75	108.75	123.75	138.75	153.75	168.75	183.75	198.75	213.75	228.75
97.75	109.75	124.75	139.75	154.75	169.75	184.75	199.75	214.75	229.75
98.75	110.75	125.75	140.75	155.75	170.75	185.75	200.75	215.75	230.75
99.75	111.75	126.75	141.75	156.75	171.75	186.75	201.75	216.75	231.75
100.75	112.75	127.75	142.75	157.75	172.75	187.75	202.75	217.75	232.75
101.75	113.75	128.75	143.75	158.75	173.75	188.75	203.75	218.75	233.75
102.75	114.75	129.75	144.75	159.75	174.75	189.75	204.75	219.75	234.75
103.75	115.75	130.75	145.75	160.75	175.75	190.75	205.75	220.75	235.75
	116.75	131.75	146.75	161.75	176.75	191.75	206.75	221.75	236.75
	117.75	132.75	147.75	162.75	177.75	192.75	207.75	222.75	237.75
	118.75	133.75	148.75	163.75	178.75	193.75	208.75	223.75	238.75
									239.75

Submitted to:
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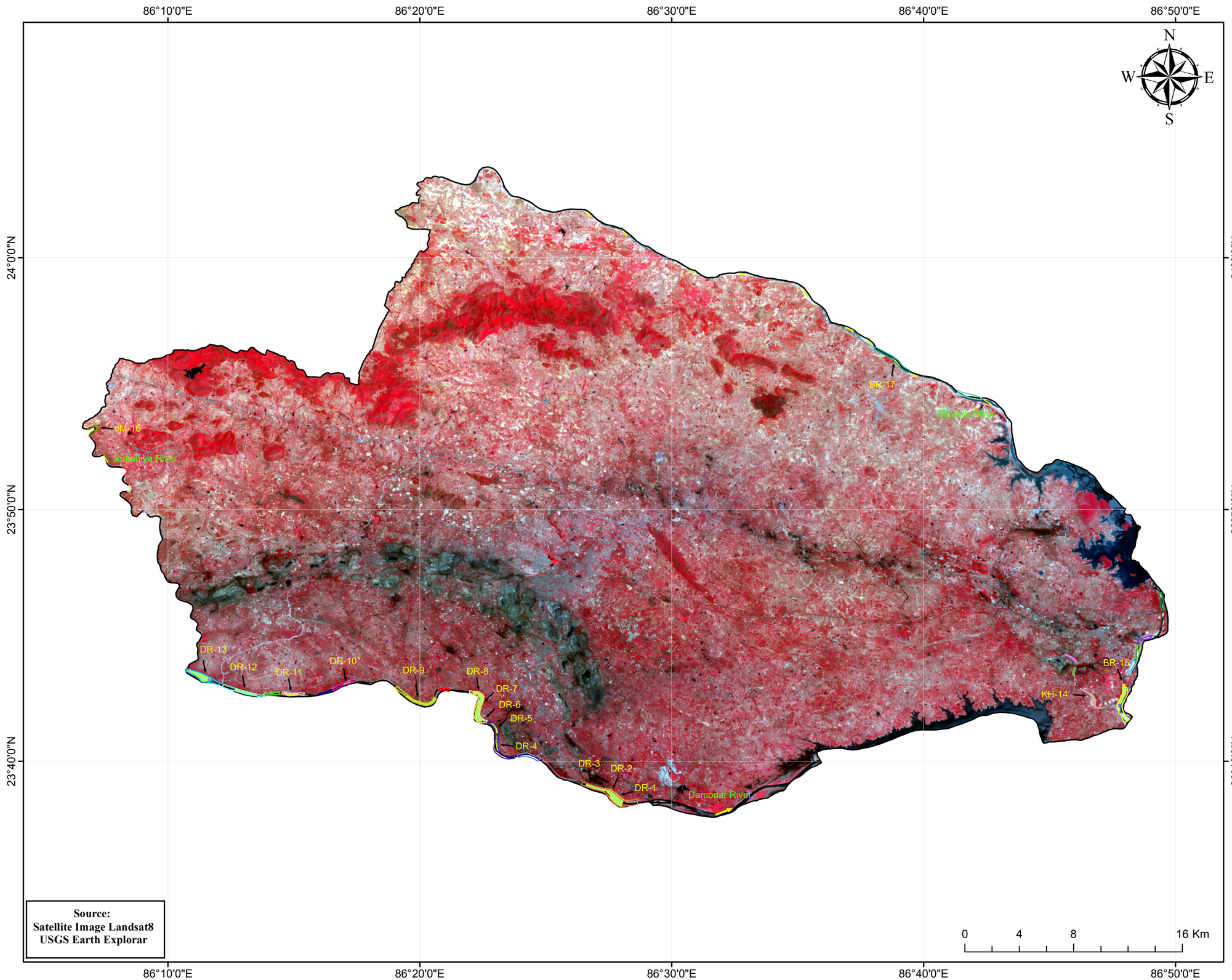
ATOMS SUSTAINABLE SOLUTION PVT LTD
A-73, 3rd Floor, Sector Noida, UTTAR PRADESH
QCI NAABET ACCREDATION NO: NABET/EAI/2023/IA0063

DHANBAD DISTRICT JHARKHAND STATE

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



UIN	Area in Hectare (Ha)
1) DR-1	51.60
2) DR-2	16.34
3) DR-3	30.63
4) DR-4	2.84
5) DR-5	9.95
6) DR-6	36.00
7) DR-7	24.127
8) DR-8	15.18
9) DR-9	34.66
10) DR-10	4.52
11) DR-11	9.87
12) DR-12	20.00
13) DR-13	45.00
14) KH-14	12.00
15) BR-15	25.70
16) JM-16	4.13
17) BR-17	2.74

Legend

- Shrub Area
- Waterbody
- Damodar River and Barakar River and Jamuniya River
- District Boundary
- Potential area of Sand

Zones

- DHN BR POS 01
- DHN BR POS 02
- DHN BR POS 03
- DHN BR POS 04
- DHN BR POS 05
- DHN BR POS 06
- DHN BR POS 07
- DHN BR POS 08
- DHN DR POS 01
- DHN DR POS 02
- DHN DR POS 03
- DHN DR POS 04
- DHN DR POS 05
- DHN DR POS 06
- DHN DR POS 07
- DHN DR POS 08
- DHN DR POS 09
- DHN DR POS 10
- DHN DR POS 11
- DHN DR POS 12
- DHN JM POS 01
- DHN JM POS 02
- DHN JM POS 03
- DHN JM POS 04
- DHN KH POS 01
- DHN KH POS 02
- DHN KH POS 03

Source:
Satellite Image Landsat8
USGS Earth Explorar

Submitted to:
State Level Environment Impact Assesment Authority, Ranchi Jharkhand

Prepared by:
ATOMS SUSTAINABLE SOLUTION PVT LTD
A-73, 3rd Floor, Sector Noida, UTTAR PRADESH
QCI NAABET ACCREDATION NO: NABET/EAI/2023/IA0063

ANNEXURE-15

REPLENISHMENT STUDY OF PRE-MONSOON AND POST MONSOON DATA

BARAKAR RIVER OF DHANBAD 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	DHN_BR_PRE_01	94.06	871244	87.12	DHN_BR_POS_01	94.92	871247	87.12	0.86	749272	0.7493
2	DHN_BR_PRE_02	96.57	248441	24.84	DHN_BR_POS_02	97.35	248443	24.84	0.78	193786	0.1938
3	DHN_BR_PRE_03	97.73	207204	20.72	DHN_BR_POS_03	98.23	207205	20.72	0.50	103603	0.1036
4	DHN_BR_PRE_04	95.77	162810	16.28	DHN_BR_POS_04	96.15	162812	16.28	0.38	61869	0.0619
5	DHN_BR_PRE_05	97.38	233342	23.33	DHN_BR_POS_05	97.57	233345	23.33	0.19	44336	0.0443
6	DHN_BR_PRE_06	99.24	256624	25.66	DHN_BR_POS_06	99.43	256625	25.66	0.19	48759	0.0488
7	DHN_BR_PRE_07	149.07	349999	35.00	DHN_BR_POS_07	149.67	350000	35.00	0.60	210000	0.2100
8	DHN_BR_PRE_08	154.09	541320	54.13	DHN_BR_POS_08	154.24	541322	54.13	0.15	81198	0.0812
				287.10			**2870999**	**287.10**		**1492822**	**1.4928**

DAMODAR RIVER OF DHANBAD 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	DHN_DR_PRE_01	130.51	1168864	116.89	DHN_DR_POS_01	130.64	1168868	116.89	0.13	151953	0.1520
2	DHN_DR_PRE_02	133.01	358372	35.84	DHN_DR_POS_02	133.41	358374	35.84	0.40	143350	0.1433
3	DHN_DR_PRE_03	134.72	820784	82.08	DHN_DR_POS_03	134.99	820787	82.08	0.27	221612	0.2216
4	DHN_DR_PRE_04	138.48	608380	60.84	DHN_DR_POS_04	138.61	608382	60.84	0.13	79090	0.0791
5	DHN_DR_PRE_05	142.30	108130	10.81	DHN_DR_POS_05	142.45	108133	10.81	0.15	16220	0.0162
6	DHN_DR_PRE_06	144.06	510395	51.04	DHN_DR_POS_06	144.21	510399	51.04	0.15	76560	0.0766
7	DHN_DR_PRE_07	147.00	194005	19.40	DHN_DR_POS_07	147.14	194006	19.40	0.14	27161	0.0272
8	DHN_DR_PRE_08	150.76	87838	8.78	DHN_DR_POS_08	150.88	87840	8.78	0.12	10541	0.0105
9	DHN_DR_PRE_09	152.44	233161	23.32	DHN_DR_POS_09	152.51	233166	23.32	0.07	16322	0.0163
10	DHN_DR_PRE_10	152.58	143735	14.37	DHN_DR_POS_10	152.89	143738	14.37	0.31	44559	0.0446
11	DHN_DR_PRE_11	154.17	514492	51.45	DHN_DR_POS_11	154.64	514494	51.45	0.47	241812	0.2418
12	DHN_DR_PRE_12	156.42	767430	76.74	DHN_DR_POS_12	157.05	767431	76.74	0.63	483482	0.4835
				551.56			**5515618**	**551.56**		**1512660**	**1.5127**

JAMUNIYA RIVER OF DHANBAD 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	DHN_JM_PRE_01	221.72	171721	17.17	DHN_JM_POS_01	221.83	171726	17.17	0.11	18890	0.0189
2	DHN_JM_PRE_02	213.79	42368	4.24	DHN_JM_POS_02	213.92	42370	4.24	0.13	5508	0.0055
3	DHN_JM_PRE_03	211.57	35408	3.54	DHN_JM_POS_03	211.99	35409	3.54	0.42	14872	0.0149
4	DHN_JM_PRE_04	200.40	19507	1.95	DHN_JM_POS_04	200.43	19510	1.95	0.03	585	0.0006
				26.90			**269015**	**26.90**		**39855**	**0.0399**

KHUDIYA RIVER OF DHANBAD 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	DHN_KH_PRE_01	98.98	226655	22.67	DHN_KH_POS_01	99.48	226659	22.67	0.50	113330	0.1133
2	DHN_KH_PRE_02	102.95	60943	6.09	DHN_KH_POS_02	103.16	60946	6.09	0.21	12799	0.0128
3	DHN_KH_PRE_03	103.86	87932	8.79	DHN_KH_POS_03	103.96	87933	8.79	0.10	8793	0.0088
				37.55			**375538**	**37.55**		**134921**	**0.1349**

Atmos Sustainanie Solutions P. Ltd.

State Level Environment Impact Assessment Authority, Jharkhand, Ranchi
Approved

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							
	BARAKAR RIVER				BARAKAR 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
DHN_BR_PRE_01	91.17	94.06	871244	345	DHN_BR_POS_01	23.692624	86.799316	92.00	94.92	871247	0.86	0.7493
	91.17					23.692951	86.799652	92.00				
	92.93					23.693832	86.800599	93.77				
	96.75					23.695071	86.801768	97.63				
	95.06					23.69499	86.800784	95.92				
	92.97					23.694777	86.799618	93.82				
	91.22					23.694443	86.798445	92.05				
	92.78					23.695428	86.799212	93.63				
	94.81					23.69601	86.800049	95.67				
	93.31					23.696828	86.800231	94.16				
	93.25					23.696349	86.799272	94.10				
	92.16					23.696118	86.797734	93.00				
	92.16					23.697114	86.798208	93.00				
	92.43					23.697679	86.798848	93.27				
	95.03					23.698577	86.799017	95.90				
	92.19					23.698367	86.798056	93.03				
	92.16					23.698305	86.79724	93.00				
	92.99					23.698326	86.796318	93.84				
	92.17					23.699542	86.797502	93.01				
	97.00					23.700679	86.798247	97.88				
	95.26					23.700413	86.796457	96.12				
	93.96					23.700376	86.795833	94.81				
	93.44					23.701607	86.796475	94.29				
	92.16					23.702502	86.797352	93.00				
	93.67					23.703179	86.79779	94.52				
	92.54					23.703224	86.795554	93.38				
	93.11					23.703654	86.794813	93.96				
	92.16					23.704095	86.79612	93.00				
	94.47					23.704503	86.797964	95.33				
	92.72					23.70547	86.797015	93.57				
	98.31					23.706382	86.795852	99.20				
	95.43					23.706655	86.796937	96.30				
	95.51					23.70688	86.797687	96.38				
	92.71					23.706959	86.799306	93.55				
	95.67					23.707617	86.797769	96.54				
	95.43					23.708331	86.796908	96.29				
	96.14					23.70862	86.797726	97.01				
	94.33					23.708741	86.798886	95.19				
	96.00					23.709078	86.80044	96.87				
	93.38					23.70955	86.799071	94.23				
	95.88					23.71005	86.797759	96.75				
	93.32					23.710652	86.798771	94.17				
	93.06					23.7111	86.80012	93.90				
	92.31					23.711819	86.801585	93.15				
	94.42					23.71196	86.799762	95.27				
	94.03					23.712395	86.798506	94.88				
	96.48					23.712657	86.799103	97.36				
	95.14					23.713053	86.800007	96.00				
	92.98					23.713836	86.801515	93.82				
	95.97					23.713721	86.799922	96.85				
	95.30					23.713743	86.798883	96.16				

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	95.48					23.713732	86.7985	96.35				
	95.87					23.714364	86.799442	96.74				
	95.34					23.714877	86.800386	96.21				
	92.71					23.715319	86.801015	93.55				
	96.76					23.715195	86.799845	97.63				
	95.29					23.715168	86.798921	96.15				
	95.87					23.715124	86.798519	96.74				
	94.41					23.715688	86.799319	95.27				
	93.76					23.716208	86.800158	94.62				
	93.92					23.716218	86.798985	94.77				
	94.54					23.716209	86.79852	95.40				
	93.15					23.717172	86.799866	94.00				
	93.82					23.717465	86.798579	94.68				
DHN_BR_PRE_02	95.01	96.57	248441	280	**DHN_BR_POS_02**	23.726073	86.804104	95.78	97.35	248443	0.78	0.1938
	97.92					23.726636	86.803131	98.71				
	96.62					23.727437	86.801575	97.40				
	96.86					23.727399	86.80289	97.64				
	97.57					23.72737	86.803968	98.36				
	95.66					23.727373	86.80483	96.43				
	97.23					23.728026	86.803769	98.02				
	99.51					23.728719	86.802928	100.31				
	97.36					23.728887	86.804072	98.15				
	93.35					23.729153	86.805754	94.10				
	95.23					23.729375	86.804793	95.99				
	99.23					23.729907	86.803693	100.03				
	97.28					23.730082	86.80448	98.07				
	94.46					23.730117	86.805511	95.23				
	93.42					23.730447	86.806597	94.18				
	97.20					23.730828	86.80549	97.98				
	100.16					23.731252	86.804455	100.97				
	97.43					23.731495	86.80536	98.21				
	94.10					23.731804	86.806358	94.86				
	94.70					23.73202	86.807373	95.46				
	95.71					23.732369	86.806105	96.48				
	99.79					23.732583	86.805251	100.59				
	94.26					23.733005	86.806506	95.02				
	97.11					23.733323	86.80774	97.89				
	94.25					23.733598	86.806704	95.02				
	97.26					23.733784	86.805646	98.04				
	94.35					23.734011	86.806781	95.11				
	99.49					23.734104	86.808077	100.29				
	94.59					23.734587	86.806962	95.35				
	97.43					23.734802	86.806041	98.22				
	94.99					23.733233	86.806127	95.76				
	95.57					23.732577	86.806163	96.34				
	98.15					23.73181	86.805292	98.94				
	96.58					23.731164	86.805753	97.36				
	98.93					23.730654	86.804399	99.73				
	94.74					23.729743	86.805095	95.50				
	98.09					23.729288	86.803858	98.89				
	96.92					23.728285	86.804434	97.70				
	97.18					23.727869	86.802895	97.97				
	97.01					23.726723	86.803848	97.80				
DHN_BR_PRE_03	95.90	97.73	207204	236	**DHN_BR_POS_03**	23.735625	86.806507	96.38	98.23	207205	0.50	0.1036
	94.89					23.735578	86.807627	95.37				
	96.69					23.735633	86.808539	97.18				
	96.74					23.73612	86.807922	97.23				
	95.34					23.736882	86.806865	95.82				
	98.81					23.73678	86.807582	99.31				
	100.55					23.736641	86.808483	101.05				
	101.22					23.736645	86.808978	101.73				
	98.43					23.737099	86.808335	98.93				

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	94.02					23.737505	86.80763	94.50				
	94.65					23.737812	86.806877	95.13				
	95.32					23.737894	86.807413	95.80				
	97.59					23.737815	86.808214	98.08				
	98.37					23.737842	86.808844	98.86				
	99.17					23.73792	86.809232	99.67				
	99.87					23.738219	86.80838	100.37				
	98.19					23.738381	86.807702	98.69				
	95.48					23.738651	86.806933	95.96				
	97.66					23.738789	86.807593	98.15				
	98.31					23.738934	86.808354	98.80				
	96.80					23.739097	86.809074	97.29				
	96.48					23.739453	86.807682	96.97				
	95.35					23.739522	86.807069	95.83				
	95.21					23.739809	86.808153	95.69				
	96.27					23.740027	86.809008	96.75				
	95.65					23.740251	86.808132	96.13				
	95.99					23.740536	86.807301	96.47				
	97.69					23.740729	86.808026	98.18.				
	99.02					23.740714	86.808786	99.52				
	100.81					23.740975	86.809432	101.32				
	99.20					23.74138	86.808626	99.70				
	98.31					23.74148	86.807601	98.80				
	98.68					23.74182	86.808325	99.18				
	100.12					23.742017	86.809407	100.62				
	99.66					23.742195	86.809805	100.16				
	99.30					23.742371	86.80959	99.80				
	99.27					23.742682	86.808577	99.77				
	96.72					23.74299	86.808134	97.21				
	100.84					23.743094	86.808824	101.35				
	103.20					23.743233	86.809862	103.71				
	95.68					23.743504	86.808347	96.16				
	101.62					23.742883	86.809525	102.13				
	99.16					23.742148	86.808414	99.66				
	100.81					23.741608	86.809427	101.31				
	98.15					23.741199	86.8078	98.64				
	97.42					23.740334	86.808874	97.91				
	94.81					23.739919	86.807867	95.29				
	96.49					23.739461	86.808803	96.97				
	96.86					23.739004	86.807317	97.34				
	98.40					23.738464	86.80907	98.90				
	95.85					23.737999	86.807459	96.33				
	96.46					23.737514	86.808297	96.94				
	99.15					23.737178	86.808904	99.65				
	97.39					23.736969	86.807526	97.88				
	98.49					23.736249	86.808467	98.98				
	94.63					23.735886	86.806952	95.11				
DHN_BR_PRE_04	96.93	95.77	162810	233	**DHN_BR_POS_04**	23.744784	86.809741	97.32	96.15	162812	0.38	0.0619
	94.62					23.745035	86.809163	95.00				
	98.46					23.745331	86.808146	98.86				
	95.36					23.745498	86.808886	95.74				
	94.74					23.745513	86.809433	95.12				
	95.15					23.745603	86.810191	95.53				
	94.62					23.74589	86.809357	95.00				
	98.14					23.746221	86.808613	98.53				
	94.62					23.746285	86.8093	95.00				
	94.62					23.746288	86.810152	95.00				
	94.62					23.746314	86.810794	95.00				
	94.62					23.746666	86.809828	95.00				
	95.64					23.746839	86.809178	96.02				
	94.79					23.74701	86.809929	95.17				
	94.62					23.746822	86.810885	95.00				

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	94.62					23.74677	86.811355	95.00				
	94.62					23.747118	86.810921	95.00				
	95.56					23.747652	86.810472	95.95				
	94.62					23.747342	86.811541	95.00				
	95.03					23.747115	86.812401	95.41				
	94.62					23.747797	86.811775	95.00				
	95.61					23.748051	86.811249	96.00				
	94.62					23.747827	86.812338	95.00				
	94.62					23.747549	86.813035	95.00				
	95.53					23.747407	86.813686	95.92				
	94.62					23.747944	86.8129	95.00				
	94.62					23.748294	86.812151	95.00				
	94.62					23.748268	86.812927	95.00				
	94.62					23.748009	86.813894	95.00				
	94.77					23.74767	86.814781	95.15				
	94.62					23.748309	86.813803	95.00				
	95.16					23.748561	86.81325	95.55				
	95.05					23.748368	86.814455	95.43				
	94.74					23.74791	86.815637	95.12				
	96.07					23.748612	86.814823	96.46				
	96.40					23.748994	86.814332	96.79				
	96.20					23.748596	86.815758	96.58				
	95.01					23.748229	86.816158	95.39				
	94.98					23.748229	86.816134	95.36				
	97.55					23.748855	86.816018	97.94				
	99.26					23.749535	86.815708	99.66				
	98.01					23.749356	86.816476	98.41				
	97.08					23.749191	86.817165	97.47				
	97.81					23.749706	86.81677	98.20				
	98.32					23.74964	86.817706	98.71				
	99.71					23.749876	86.817572	100.12				
	97.32					23.749953	86.818177	97.71				
	97.92					23.74946	86.817293	98.31				
	97.23					23.748894	86.816442	97.62				
	97.92					23.749038	86.815336	98.31				
	95.59					23.748434	86.815359	95.97				
	94.99					23.748002	86.814679	95.37				
	95.75					23.748702	86.814373	96.13				
	94.62					23.747799	86.813416	95.00				
DHN_BR_PRE_05	97.58	97.38	233342	242	**DHN_BR_POS_05**	23.756773	86.825809	97.78	97.57	233345	0.19	0.0443
	98.44					23.756772	86.825173	98.64				
	97.90					23.75672	86.824582	98.10				
	99.31					23.756763	86.823685	99.51				
	98.45					23.757073	86.824735	98.65				
	97.57					23.757157	86.825337	97.77				
	96.14					23.757324	86.826013	96.33				
	96.79					23.757501	86.825425	96.98				
	98.71					23.757609	86.824754	98.91				
	102.02					23.757896	86.823809	102.22				
	96.90					23.75803	86.825165	97.09				
	96.10					23.758058	86.825651	96.29				
	95.81					23.758213	86.826277	96.00				
	96.07					23.758631	86.825487	96.27				
	96.31					23.758776	86.824992	96.50				
	98.13					23.759072	86.823991	98.33				
	95.81					23.7594	86.82528	96.00				
	95.81					23.759491	86.82579	96.00				
	95.81					23.7595	86.826392	96.00				
	95.81					23.759932	86.825834	96.00				
	95.81					23.760082	86.825175	96.00				
	97.18					23.760551	86.824018	97.38				
	95.93					23.761	86.825511	96.12				

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	96.83					23.761186	86.826151	97.03				
	97.11					23.761775	86.824162	97.31				
	96.85					23.761861	86.825677	97.05				
	97.40					23.761957	86.826038	97.60				
	96.64					23.762291	86.825071	96.84				
	99.50					23.762452	86.824098	99.70				
	97.31					23.762709	86.82476	97.50				
	98.14					23.763069	86.826115	98.34				
	97.12					23.763188	86.82526	97.31				
	98.49					23.763396	86.824116	98.68				
	98.00					23.763669	86.82445	98.19				
	97.18					23.76401	86.82531	97.37				
	98.74					23.76442	86.826264	98.93				
	97.15					23.764478	86.824848	97.34				
	99.35					23.764458	86.824107	99.55				
	96.81					23.764996	86.825201	97.00				
	99.06					23.765389	86.826204	99.26				
	96.81					23.765201	86.824928	97.00				
	96.81					23.765191	86.824899	97.00				
	97.48					23.765005	86.824115	97.67				
DHN_BR_PRE_06	98.82	99.24	256624	239	**DHN_BR_POS_06**	23.766922	86.825976	99.02	99.43	256625	0.19	0.0488
	96.94					23.76695	86.825108	97.13				
	99.94					23.767013	86.824016	100.14				
	97.14					23.767321	86.824722	97.33				
	97.07					23.767544	86.825234	97.27				
	97.91					23.76779	86.825877	98.11				
	96.96					23.767923	86.825253	97.15				
	97.00					23.768068	86.824485	97.20				
	100.96					23.76824	86.823866	101.16				
	96.81					23.768737	86.824675	97.00				
	97.30					23.769118	86.825144	97.49				
	96.81					23.769145	86.824548	97.00				
	100.22					23.769239	86.823759	100.42				
	96.81					23.769655	86.824799	97.00				
	98.65					23.77002	86.825521	98.85				
	97.45					23.770124	86.8252	97.65				
	96.81					23.770233	86.824446	97.00				
	100.19					23.770508	86.823677	100.40				
	96.81					23.770955	86.824811	97.00				
	98.85					23.771347	86.825417	99.05				
	96.81					23.771915	86.824261	97.00				
	99.02					23.77216	86.823509	99.22				
	96.81					23.772391	86.824551	97.00				
	97.87					23.772616	86.825045	98.07				
	98.38					23.772966	86.824951	98.58				
	97.53					23.7731	86.823865	97.72				
	98.69					23.773301	86.823381	98.88				
	97.63					23.774009	86.824145	97.82				
	104.29					23.774602	86.824912	104.50				
	98.58					23.774821	86.823884	98.77				
	98.11					23.775005	86.823117	98.31				
	99.54					23.775456	86.823704	99.74				
	101.69					23.775818	86.824139	101.90				
	101.78					23.776176	86.824586	101.98				
	100.57					23.776298	86.823694	100.77				
	100.86					23.776311	86.822852	101.06				
	101.49					23.776584	86.82322	101.69				
	100.62					23.776815	86.823764	100.82				
	100.97					23.777052	86.824272	101.18				
	102.73					23.777445	86.824245	102.93				
	101.91					23.777516	86.823487	102.12				
	101.38					23.777391	86.822984	101.58				

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	100.85					23.777707	86.822416	101.05					
	99.69					23.777985	86.823193	99.89					
	102.54					23.778193	86.824117	102.75					
	101.75					23.777109	86.823297	101.96					
	99.40					23.776581	86.824251	99.60					
	99.63					23.775702	86.823176	99.83					
	102.00					23.775236	86.824383	102.20					
DHN_BR_PRE_07	148.80	149.07	349999	344	**DHN_BR_POS_07**	23.912138	86.689552	149.39	149.67	350000	0.60	0.210000	
	147.54					23.911711	86.689518	148.13					
	147.41					23.910985	86.689281	148.00					
	147.41					23.911249	86.689642	148.00					
	147.42					23.911612	86.690004	148.01					
	148.36					23.91168	86.690377	148.96					
	147.74					23.911152	86.690201	148.34					
	147.42					23.910493	86.690016	148.01					
	147.94					23.910707	86.690522	148.53					
	150.78					23.91118	86.691203	151.38					
	149.39					23.910651	86.691154	149.99					
	147.41					23.909765	86.691021	148.00					
	147.89					23.910091	86.691548	148.48					
	151.98					23.910641	86.692288	152.59					
	148.78					23.910103	86.692303	149.38					
	147.72					23.909504	86.692303	148.31					
	147.41					23.90899	86.69225	148.00					
	147.87					23.909432	86.692875	148.46					
	149.14					23.909933	86.69338	149.74					
	148.95					23.910348	86.694044	149.55					
	147.74					23.909794	86.693982	148.33					
	147.55					23.909414	86.69396	148.15					
	147.41					23.909022	86.69394	148.00					
	147.41					23.908394	86.693943	148.00					
	148.04					23.909028	86.694801	148.64					
	151.97					23.909462	86.695395	152.59					
	158.19					23.909964	86.696182	158.83					
	153.82					23.909488	86.696024	154.44					
	149.31					23.908874	86.69581	149.91					
	147.95					23.908507	86.695662	148.54					
	147.41					23.907954	86.695465	148.00					
	148.36					23.908555	86.696333	148.96					
	151.36					23.90916	86.697184	151.97					
	152.87					23.909605	86.697881	153.49					
	151.46					23.909037	86.697768	152.07					
	147.84					23.908377	86.697563	148.44					
	147.41					23.90743	86.697195	148.00					
	147.87					23.907776	86.697886	148.46					
	150.06					23.90832	86.698458	150.66					
	151.19					23.908883	86.69907	151.80					
	151.35					23.909153	86.699583	151.96					
	148.60					23.908345	86.699282	149.19					
	147.66					23.907645	86.698968	148.26					
	147.41					23.907075	86.69868	148.00					
	147.91					23.90777	86.699617	148.50					
	149.36					23.908187	86.700222	149.96					
	150.05					23.908349	86.700495	150.65					
	152.03					23.90865	86.701034	152.64					
	149.90					23.908008	86.70077	150.50					
	148.28					23.907322	86.700465	148.88					
	147.46					23.906741	86.700232	148.05					
	147.46					23.906741	86.70022	148.05					
	149.31					23.907225	86.701184	149.91					
	151.82					23.90769	86.701885	152.43					
	151.76					23.908081	86.702653	152.37					

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	151.19					23.907315	86.702397	151.80				
	147.41					23.906446	86.701842	148.00				
	147.41					23.906446	86.701824	148.00				
	150.11					23.907294	86.703082	150.71				
	150.44					23.907551	86.703466	151.05				
	150.56					23.907621	86.703662	151.16				
	149.94					23.907283	86.703698	150.55				
	147.41					23.906416	86.703762	148.00				
	147.41					23.906072	86.703838	148.00				
	147.41					23.906646	86.704258	148.00				
	149.43					23.907298	86.704716	150.03				
	147.60					23.906721	86.704605	148.20				
	147.41					23.906018	86.70446	148.00				
DHN_BR_PRE_08	161.32	154.09	541320	193	**DHN_BR_POS_08**	23.939481	86.633804	161.48	154.24	541322	0.15	0.081200
	159.37					23.939954	86.634547	159.53				
	157.44					23.940553	86.635225	157.60				
	156.99					23.93985	86.635059	157.15				
	157.45					23.938941	86.63472	157.61				
	154.95					23.939287	86.635206	155.11				
	155.97					23.94008	86.636024	156.13				
	156.19					23.939386	86.635761	156.35				
	157.08					23.938604	86.635308	157.24				
	156.67					23.939	86.635906	156.83				
	156.66					23.93954	86.636586	156.82				
	157.19					23.939682	86.636734	157.35				
	153.11					23.938629	86.636871	153.27				
	155.39					23.937766	86.636719	155.55				
	152.21					23.938178	86.637701	152.36				
	152.69					23.938589	86.63858	152.84				
	153.41					23.938031	86.638675	153.56				
	156.43					23.937075	86.638447	156.59				
	157.06					23.937608	86.639408	157.22				
	157.03					23.937879	86.64016	157.19				
	154.41					23.936789	86.640224	154.56				
	156.29					23.936074	86.640281	156.45				
	154.80					23.93662	86.640953	154.95				
	156.19					23.937081	86.64175	156.35				
	155.25					23.935905	86.64178	155.41				
	156.61					23.935254	86.641893	156.77				
	156.04					23.935639	86.642901	156.19				
	155.46					23.93587	86.643737	155.62				
	153.90					23.934892	86.643939	154.06				
	157.22					23.93426	86.64382	157.38				
	157.11					23.93478	86.645096	157.26				
	153.35					23.934823	86.645873	153.50				
	157.07					23.933743	86.645677	157.23				
	160.15					23.933087	86.645623	160.31				
	155.22					23.933462	86.646804	155.38				

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	155.73					23.933688	86.647771	155.88				
	149.45					23.932713	86.647513	149.60				
	155.23					23.931892	86.647134	155.38				
	155.77					23.932146	86.648132	155.93				
	156.31					23.932199	86.649325	156.47				
	157.17					23.931463	86.648125	157.32				
	156.26					23.931388	86.647812	156.42				
	156.28					23.931285	86.647638	156.43				
	156.61					23.931241	86.647946	156.77				
	156.90					23.931274	86.648268	157.06				
	153.65					23.931308	86.649057	153.80				
	151.98					23.931445	86.650328	152.13				
	151.67					23.931065	86.649457	151.82				
	153.26					23.930918	86.648748	153.42				
	154.74					23.930912	86.648434	154.90				
	156.00					23.930745	86.648143	156.15				
	154.67					23.930745	86.64843	154.83				
	152.55					23.930675	86.648877	152.71				
	150.88					23.930756	86.649729	151.03				
	151.79					23.930965	86.650648	151.94				
	150.92					23.930431	86.649884	151.07				
	151.62					23.930184	86.649176	151.77				
	155.06					23.929983	86.648726	155.22				
	151.92					23.929942	86.649301	152.07				
	150.94					23.930193	86.650311	151.09				
	153.12					23.930436	86.651095	153.28				
	150.89					23.929755	86.649984	151.04				
	153.29					23.929586	86.649319	153.44				
	153.97					23.929544	86.649181	154.13				
	152.76					23.929309	86.649631	152.91				
	150.85					23.929497	86.650663	151.00				
	153.94					23.929516	86.651805	154.09				
	151.31					23.928773	86.650559	151.47				
	152.94					23.9285	86.650105	153.09				
	150.95					23.928479	86.651297	151.10				
	153.96					23.928699	86.652475	154.12				
	151.35					23.927914	86.651685	151.50				
	154.16					23.927485	86.651013	154.32				
	152.52					23.927384	86.651524	152.67				
	152.73					23.927928	86.653061	152.88				
	151.10					23.927125	86.652875	151.25				
	153.38					23.92629	86.65258	153.53				
	150.90					23.926709	86.653384	151.05				
	153.48					23.927053	86.654442	153.63				
	151.03					23.926186	86.654216	151.18				
	153.36					23.925445	86.653908	153.51				
	151.17					23.925728	86.654676	151.32				
	154.41					23.926313	86.655528	154.57				
	151.46					23.925703	86.655546	151.61				
	151.95					23.924773	86.655237	152.10				
	150.98					23.925113	86.655877	151.14				
	152.44					23.925546	86.656903	152.60				
	150.85					23.924864	86.656457	151.00				
	150.85					23.92439	86.656156	151.00				
	150.85					23.924409	86.656176	151.00				
	151.32					23.924827	86.656916	151.48				
	153.61					23.925356	86.657348	153.76				
	153.36					23.925303	86.657321	153.51				
	151.09					23.924421	86.656997	151.24				
	151.05					23.924061	86.656816	151.21				

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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				POST MONSOON DATA							
	DAMODAR RIVER				DAMODAR 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
DHN_DR_PRE_01	140.33	130.51	1168864	280	DHN_DR_POS_01	23.651054	86.440234	140.47	130.64	1168868	0.13	0.7598
	129.91					23.652211	86.440738	130.04				
	134.86					23.652908	86.440931	135.00				
	132.25					23.651418	86.441332	132.38				
	138.23					23.650685	86.44148	138.37				
	132.37					23.651052	86.441792	132.50				
	132.39					23.651052	86.441787	132.52				
	134.15					23.65238	86.442707	134.28				
	129.91					23.651352	86.442478	130.04				
	135.48					23.650436	86.442442	135.61				
	129.87					23.651093	86.443303	130.00				
	133.50					23.651896	86.44429	133.63				
	129.92					23.650972	86.444225	130.05				
	133.97					23.649862	86.444177	134.11				
	130.32					23.650339	86.444682	130.45				
	134.87					23.651368	86.445633	135.01				
	129.87					23.650271	86.445819	130.00				
	135.72					23.649246	86.445735	135.85				
	130.93					23.649693	86.446287	131.06				
	136.32					23.650708	86.447294	136.45				
	128.88					23.649993	86.447133	129.01				
	134.57					23.64885	86.446881	134.71				
	129.67					23.649318	86.447525	129.80				
	134.68					23.650236	86.448641	134.82				
	130.16					23.649756	86.448676	130.29				
	130.73					23.648836	86.448606	130.86				
	133.98					23.648325	86.448533	134.11				
	129.01					23.648935	86.449783	129.14				
	136.04					23.64965	86.451055	136.18				
	129.14					23.648764	86.450975	129.27				
	135.99					23.647781	86.450897	136.13				
	129.10					23.648311	86.451473	129.23				
	133.73					23.649124	86.452552	133.87				
	130.20					23.648095	86.452568	130.33				
	134.48					23.647384	86.452608	134.61				
	129.00					23.648214	86.453396	129.13				
	133.15					23.648724	86.454212	133.28				
	128.87					23.647657	86.454331	129.00				
	132.39					23.646867	86.454226	132.52				
	128.87					23.647349	86.455382	129.00				
	136.17					23.648103	86.456741	136.30				
	128.87					23.647289	86.456382	129.00				
	130.63					23.646012	86.4558	130.76				
	128.92					23.646393	86.456599	129.05				
	128.91					23.647091	86.457565	129.04				
	130.92					23.647532	86.458464	131.05				
	128.87					23.646129	86.458469	129.00				
	128.87					23.645131	86.458292	129.00				
	130.06					23.644604	86.458119	130.19				
	128.87					23.645262	86.459134	129.00				
	129.46					23.646129	86.460273	129.59				
	131.07					23.646378	86.46095	131.20				
	128.87					23.644961	86.460299	129.00				
	129.17					23.643717	86.459879	129.30				
	128.87					23.644498	86.460884	129.00				
	130.28					23.645211	86.462204	130.41				
	128.87					23.644167	86.461618	129.00				
	128.83					23.642999	86.460869	128.96				
	128.04					23.643564	86.461988	128.17				
	129.33					23.644248	86.463254	129.46				
	127.99					23.643469	86.463097	128.12				
	128.14					23.642192	86.462737	128.26				
	129.14					23.641562	86.462566	129.27				
	127.87					23.642158	86.463739	128.00				
	128.68					23.64245	86.464886	128.81				

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	129.21					23.642545	86.465145	129.34				
	127.87					23.641499	86.464638	128.00				
	128.82					23.640209	86.463995	128.95				
	127.89					23.640719	86.464889	128.02				
	127.91					23.641253	86.465848	128.04				
	129.38					23.641445	86.466344	129.51				
	127.92					23.640169	86.466028	128.05				
	129.58					23.638794	86.465907	129.71				
	127.87					23.639532	86.466818	128.00				
	129.10					23.640623	86.468037	129.23				
	127.87					23.639644	86.468138	128.00				
	128.72					23.638459	86.467852	128.85				
	128.01					23.639051	86.468706	128.14				
	129.24					23.640517	86.47017	129.37				
	127.87					23.639482	86.469743	128.00				
	128.99					23.638221	86.469313	129.12				
	127.87					23.638883	86.470387	128.00				
	129.59					23.640478	86.471549	129.72				
	127.87					23.639297	86.471374	128.00				
	130.85					23.637695	86.471156	130.98				
	127.87					23.639656	86.472691	128.00				
	130.31					23.640873	86.473812	130.44				
	128.59					23.638791	86.473674	128.72				
	130.78					23.637651	86.473666	130.91				
	127.99					23.639068	86.474802	128.12				
	134.30					23.64135	86.475939	134.43				
	127.87					23.639202	86.475534	128.00				
	129.90					23.637902	86.475301	130.03				
	127.87					23.639955	86.47622	128.00				
	132.97					23.641475	86.476887	133.11				
	128.22					23.640394	86.476886	128.35				
	127.87					23.639202	86.476852	128.00				
	129.37					23.638342	86.477069	129.50				
DHN_DR_PRE_02	132.85	133.01	358372	245	**DHN_DR_POS_02**	23.668686	86.413113	133.25	133.41	358374	0.40	0.1433
	131.75					23.668407	86.412844	132.15				
	131.60					23.668258	86.412686	132.00				
	131.60					23.667978	86.412424	132.00				
	131.60					23.667768	86.412194	132.00				
	131.71					23.667387	86.411863	132.10				
	133.90					23.666799	86.411303	134.31				
	131.60					23.667595	86.411503	132.00				
	131.60					23.668164	86.411616	132.00				
	131.60					23.66876	86.411756	132.00				
	133.60					23.669414	86.411861	134.00				
	131.60					23.669006	86.411257	132.00				
	131.60					23.668518	86.410926	132.00				
	134.08					23.667731	86.409778	134.48				
	131.65					23.669182	86.410142	132.05				
	132.34					23.669803	86.410563	132.74				
	131.70					23.669236	86.409247	132.10				
	133.59					23.668557	86.408688	133.99				
	134.98					23.668506	86.408244	135.38				
	132.79					23.66896	86.408249	133.19				
	132.82					23.6701	86.408458	133.22				
	136.38					23.670433	86.408518	136.79				
	132.05					23.66982	86.407427	132.45				
	132.72					23.669634	86.407034	133.12				
	134.58					23.66925	86.406534	134.99				
	132.97					23.669656	86.406526	133.38				
	131.62					23.669996	86.406574	132.01				
	140.28					23.671101	86.406781	140.70				
	131.73					23.670107	86.406115	132.13				
	132.90					23.66978	86.40586	133.30				
	134.53					23.669559	86.405679	134.94				
	132.60					23.669858	86.405577	133.00				
	131.60					23.670244	86.405542	132.00				
	133.70					23.671122	86.40542	134.10				
	137.36					23.671851	86.405147	137.77				
	131.60					23.670488	86.404787	132.00				
	131.60					23.670141	86.404728	132.00				
	132.79					23.669869	86.404647	133.19				
	131.60					23.670129	86.404431	132.00				
	131.60					23.670476	86.4043	132.00				
	132.26					23.671482	86.404035	132.66				
	136.13					23.672163	86.403641	136.54				
	131.67					23.671061	86.403526	132.06				

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	131.82					23.670534	86.403657	132.22				
	132.10					23.670163	86.403649	132.50				
	132.14					23.67005	86.403692	132.54				
	132.20					23.670278	86.403422	132.59				
	132.06					23.670452	86.403327	132.46				
	131.60					23.671245	86.402928	132.00				
	138.27					23.671966	86.402347	138.69				
	131.68					23.670771	86.402691	132.07				
	132.23					23.670313	86.40282	132.62				
	132.42					23.670152	86.402893	132.82				
	132.54					23.670047	86.402921	132.94				
	132.45					23.670127	86.402755	132.85				
	132.28					23.670271	86.402641	132.67				
	132.83					23.671352	86.401606	133.23				
	139.12					23.671766	86.401128	139.54				
	132.60					23.670693	86.401416	133.00				
	132.60					23.670159	86.401662	133.00				
	132.97					23.669947	86.401743	133.37				
	132.60					23.670589	86.400739	133.00				
	136.73					23.671437	86.400239	137.14				
	133.28					23.670928	86.399977	133.68				
	132.66					23.669983	86.399902	133.06				
	133.89					23.669606	86.399783	134.29				
	132.60					23.670356	86.399248	133.00				
	132.60					23.670817	86.39883	133.00				
	133.88					23.6711	86.398366	134.28				
	132.60					23.670215	86.398429	133.00				
	133.41					23.669339	86.398348	133.81				
	132.60					23.670392	86.39809	133.00				
	134.04					23.671029	86.397891	134.44				
DHN_DR_PRE_03	134.57	134.72	820784	250	**DHN_DR_POS_03**	23.670519	86.395876	134.84	134.99	820787	0.27	0.2216
	134.07					23.670369	86.395828	134.34				
	132.73					23.669912	86.395686	133.00				
	133.64					23.668789	86.395343	133.91				
	134.23					23.668542	86.395254	134.50				
	132.73					23.669439	86.395024	133.00				
	133.34					23.670066	86.394856	133.61				
	136.81					23.670409	86.394726	137.09				
	133.17					23.670038	86.394479	133.44				
	132.73					23.669854	86.39432	133.00				
	132.80					23.669081	86.39388	133.07				
	133.10					23.668508	86.393724	133.37				
	132.75					23.669079	86.393453	133.02				
	132.73					23.669822	86.39333	133.00				
	133.60					23.670187	86.393217	133.87				
	132.73					23.669984	86.393031	133.00				
	132.73					23.669742	86.392885	133.00				
	132.73					23.66906	86.392195	133.00				
	132.73					23.66837	86.391359	133.00				
	132.75					23.669241	86.391492	133.02				
	132.98					23.670039	86.391853	133.25				
	134.91					23.670318	86.39175	135.18				
	133.66					23.670073	86.391262	133.93				
	132.77					23.669225	86.390449	133.04				
	132.91					23.66874	86.389717	133.17				
	132.73					23.669666	86.389291	133.00				
	132.93					23.670302	86.38932	133.20				
	133.23					23.670595	86.389361	133.50				
	133.13					23.670815	86.389279	133.40				
	132.73					23.670721	86.388725	133.00				
	133.13					23.670435	86.387704	133.40				
	136.57					23.670164	86.386242	136.85				
	133.53					23.670974	86.386827	133.80				
	132.81					23.671313	86.387168	133.08				
	132.40					23.671746	86.387538	132.67				
	132.21					23.671689	86.387193	132.47				
	132.63					23.671577	86.386862	132.90				
	133.61					23.671395	86.385982	133.88				
	135.49					23.671242	86.385352	135.76				
	139.12					23.671314	86.384689	139.40				
	133.73					23.671957	86.385237	134.00				
	133.73					23.672339	86.385568	134.00				
	133.79					23.672729	86.385902	134.05				
	135.28					23.673157	86.38618	135.56				
	133.73					23.673117	86.385573	134.00				
	133.73					23.673117	86.385141	134.00				

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	133.73					23.67307	86.384215	134.00				
	135.75					23.673007	86.383097	136.03				
	133.73					23.67369	86.384648	134.00				
	133.73					23.673865	86.384968	134.00				
	134.61					23.674098	86.385398	134.88				
	135.20					23.674225	86.385553	135.47				
	133.73					23.67437	86.385	134.00				
	133.73					23.674629	86.382716	134.00				
	133.73					23.675219	86.384891	134.00				
	135.72					23.67542	86.385276	136.00				
	133.73					23.675593	86.384885	134.00				
	133.73					23.675684	86.383052	134.00				
	133.73					23.675763	86.382602	134.00				
	134.60					23.675813	86.382396	134.87				
	133.92					23.676045	86.382719	134.19				
	133.83					23.676294	86.383184	134.10				
	133.84					23.676816	86.384674	134.11				
	134.50					23.676986	86.385037	134.77				
	134.14					23.677231	86.384672	134.41				
	136.99					23.677917	86.38279	137.26				
	133.88					23.679104	86.384034	134.15				
	134.95					23.68012	86.385016	135.22				
	134.39					23.680325	86.383614	134.66				
	137.32					23.680472	86.383107	137.59				
	134.39					23.681331	86.384301	134.66				
	136.11					23.681911	86.385179	136.38				
	134.73					23.681954	86.384395	135.00				
	134.73					23.681954	86.384224	135.00				
	137.27					23.682296	86.3832	137.54				
	134.91					23.682636	86.384036	135.18				
	134.73					23.68277	86.384446	135.00				
	136.80					23.683177	86.385345	137.08				
	134.73					23.683595	86.384247	135.00				
	135.58					23.683814	86.383812	135.85				
	136.80					23.684156	86.383325	137.08				
	137.30					23.68552	86.385336	137.57				
	134.73					23.685717	86.384226	135.00				
	135.30					23.685842	86.383692	135.57				
	135.64					23.686087	86.383405	135.91				
	134.93					23.686516	86.383996	135.20				
	135.43					23.687104	86.385083	135.71				
	134.93					23.686973	86.383896	135.21				
	135.15					23.687048	86.383515	135.42				
	136.11					23.687335	86.383173	136.38				
	134.73					23.687766	86.383463	135.00				
	136.42					23.688795	86.384537	136.69				
	135.67					23.688556	86.383149	135.94				
	138.06					23.688688	86.382705	138.33				
	136.52					23.689381	86.382987	136.80				
	138.08					23.690343	86.38352	138.35				
	135.78					23.689986	86.382558	136.06				
	137.45					23.689935	86.382049	137.72				
	137.82					23.689973	86.38177	138.10				
	136.65					23.690375	86.381803	136.92				
	135.73					23.69098	86.382002	136.00				
	137.04					23.691902	86.382119	137.31				
	136.50					23.691133	86.381162	136.78				
	138.26					23.690886	86.380538	138.54				
	136.07					23.691556	86.380582	136.35				
	137.39					23.692689	86.38049	137.67				
	136.23					23.691575	86.379882	136.50				
	138.20					23.691303	86.379646	138.48				
	135.73					23.691836	86.3794	136.00				
	136.51					23.693227	86.37908	136.78				
	135.73					23.691976	86.378532	136.00				
	136.11					23.691783	86.378271	136.38				
DHN_DR_PRE_04	137.29	138.48	608380	200	**DHN_DR_POS_04**	23.693647	86.377715	137.43	138.61	608382	0.13	0.0791
	136.05					23.69338	86.377584	136.19				
	135.86					23.693199	86.377488	136.00				
	138.72					23.6922	86.376678	138.86				
	135.86					23.693288	86.376966	136.00				
	137.26					23.693807	86.377044	137.40				
	136.20					23.693479	86.376598	136.34				
	135.86					23.693267	86.376148	136.00				
	136.98					23.692788	86.374846	137.12				
	136.29					23.693472	86.375576	136.42				

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	136.64					23.693933	86.375895	136.77				
	137.18					23.694167	86.376085	137.32				
	136.75					23.693981	86.375421	136.89				
	136.86					23.693737	86.374756	137.00				
	137.29					23.693152	86.373893	137.43				
	136.86					23.69404	86.374434	137.00				
	138.80					23.694555	86.374644	138.93				
	141.25					23.694947	86.374869	141.39				
	138.46					23.694604	86.374188	138.60				
	137.28					23.694393	86.373761	137.42				
	136.96					23.694301	86.373506	137.10				
	137.52					23.69389	86.372512	137.65				
	136.99					23.694802	86.373381	137.13				
	138.65					23.695158	86.373669	138.78				
	140.16					23.695391	86.373774	140.30				
	137.15					23.695318	86.37313	137.29				
	136.86					23.695229	86.372233	137.00				
	137.20					23.695148	86.371389	137.33				
	136.86					23.695821	86.372262	137.00				
	137.55					23.696128	86.372776	137.68				
	138.23					23.696271	86.372944	138.37				
	139.08					23.696384	86.373119	139.22				
	138.15					23.696435	86.372839	138.29				
	136.86					23.696427	86.371825	137.00				
	136.92					23.696543	86.371335	137.06				
	137.54					23.69675	86.370657	137.68				
	136.86					23.697153	86.371409	137.00				
	137.02					23.697339	86.371829	137.16				
	138.39					23.697741	86.372517	138.53				
	137.20					23.697996	86.371844	137.34				
	137.15					23.69849	86.370657	137.29				
	137.40					23.698784	86.372159	137.54				
	139.69					23.699007	86.372738	139.83				
	136.86					23.699291	86.372236	137.00				
	136.86					23.699897	86.370968	137.00				
	136.86					23.700267	86.372201	137.00				
	136.91					23.700398	86.372507	137.05				
	140.42					23.70064	86.373014	140.56				
	137.11					23.701042	86.372256	137.25				
	138.11					23.701634	86.37142	138.25				
	138.09					23.702037	86.372589	138.23				
	140.27					23.702671	86.373497	140.41				
	137.91					23.703718	86.37248	138.05				
	138.78					23.703958	86.372193	138.92				
	137.95					23.704035	86.372473	138.09				
	137.86					23.704071	86.372691	138.00				
	140.83					23.704512	86.374073	140.97				
	137.86					23.704663	86.373135	138.00				
	137.86					23.70475	86.372741	138.00				
	137.87					23.704876	86.372499	138.01				
	137.89					23.705009	86.372834	138.03				
	137.91					23.705096	86.373245	138.05				
	140.24					23.705306	86.37437	140.38				
	137.89					23.705543	86.373394	138.03				
	138.79					23.705691	86.3731	138.93				
	140.24					23.705873	86.372869	140.38				
	138.61					23.705971	86.373228	138.75				
	138.03					23.706055	86.373645	138.17				
	139.22					23.706252	86.374735	139.36				
	138.15					23.706564	86.373891	138.29				
	138.55					23.706723	86.373663	138.69				
	140.06					23.707072	86.373315	140.20				
	138.80					23.707144	86.373802	138.94				
	138.52					23.707505	86.375108	138.66				
	137.96					23.707956	86.374319	138.10				
	139.14					23.708261	86.373656	139.28				
	138.22					23.708371	86.374479	138.36				
	139.52					23.708771	86.37514	139.66				
	137.91					23.70901	86.374066	138.05				
	138.05					23.70901	86.373742	138.19				
	138.05					23.709076	86.373446	138.19				
	137.86					23.709266	86.373694	138.00				
	137.86					23.70947	86.373921	138.00				
	139.19					23.710163	86.374862	139.33				
	137.86					23.709902	86.373705	138.00				
	137.86					23.709871	86.373361	138.00				

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	138.68					23.709833	86.373131	138.82				
	138.14					23.710164	86.37319	138.27				
	137.89					23.710355	86.373315	138.03				
	138.13					23.711055	86.373746	138.26				
	139.42					23.711624	86.374017	139.56				
	137.96					23.711182	86.373138	138.10				
	137.96					23.710924	86.372606	138.10				
	139.52					23.710842	86.372222	139.66				
	138.90					23.711189	86.372322	139.04				
	140.78					23.712263	86.372602	140.92				
	139.30					23.711965	86.371853	139.44				
	140.89					23.711424	86.37117	141.03				
	139.21					23.71223	86.371263	139.35				
	140.27					23.712639	86.371221	140.41				
	138.91					23.712266	86.370895	139.05				
	142.36					23.711443	86.370238	142.50				
	139.12					23.712131	86.370342	139.26				
	140.77					23.712692	86.370315	140.91				
	139.53					23.712561	86.369803	139.67				
	139.35					23.71209	86.369404	139.49				
	139.58					23.711687	86.368951	139.72				
	139.08					23.712259	86.368966	139.22				
	143.28					23.712909	86.368923	143.42				
	138.86					23.712319	86.368342	139.00				
	139.44					23.711876	86.367685	139.58				
	139.02					23.712319	86.367725	139.16				
	138.95					23.712401	86.367719	139.09				
	143.65					23.713081	86.36774	143.79				
	138.97					23.712516	86.367349	139.11				
	139.16					23.712341	86.367268	139.30				
	140.73					23.711954	86.366729	140.87				
	138.91					23.712481	86.367059	139.05				
	143.14					23.713197	86.367253	143.28				
	140.31					23.712884	86.366704	140.45				
	138.92					23.71252	86.366373	139.06				
	139.60					23.712011	86.366183	139.74				
	142.93					23.713411	86.366414	143.07				
DHN_DR_PRE_05	143.20	142.3	108130	155	**DHN_DR_POS_05**	23.714681	86.35277	143.35	142.45	108133	0.15	0.0162
	140.71					23.713796	86.352621	140.86				
	140.75					23.713555	86.352595	140.89				
	144.56					23.712947	86.352499	144.71				
	140.86					23.713413	86.352404	141.00				
	140.86					23.713775	86.352314	141.00				
	142.11					23.714426	86.352128	142.25				
	143.73					23.714766	86.352096	143.88				
	140.86					23.713739	86.351861	141.00				
	140.86					23.713474	86.351776	141.00				
	143.07					23.713186	86.351636	143.21				
	140.95					23.714184	86.351505	141.09				
	144.09					23.71484	86.351416	144.24				
	141.22					23.714013	86.350854	141.36				
	144.65					23.713509	86.350443	144.79				
	141.79					23.714389	86.350408	141.93				
	144.03					23.714933	86.350375	144.17				
	141.21					23.714279	86.349882	141.35				
	145.16					23.71377	86.349558	145.31				
	140.98					23.714255	86.349492	141.12				
	141.39					23.714653	86.349421	141.54				
	142.03					23.715057	86.349341	142.17				
	140.86					23.714782	86.349127	141.00				
	140.86					23.714455	86.34898	141.00				
	143.07					23.71399	86.34876	143.22				
	140.86					23.714566	86.34857	141.00				
	141.97					23.715153	86.348337	142.11				
	140.86					23.714493	86.348018	141.00				
	142.62					23.714026	86.347907	142.76				
	144.61					23.713865	86.347808	144.75				
	143.37					23.713963	86.347746	143.52				
	141.75					23.714094	86.347696	141.89				
	140.86					23.714885	86.347597	141.00				
	142.83					23.715176	86.347477	142.97				
	141.09					23.7147	86.347352	141.23				
	141.68					23.714086	86.347252	141.82				
	143.24					23.713928	86.347221	143.38				
	144.72					23.713771	86.347191	144.87				

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	143.24					23.7139	86.347077	143.38				
	141.80					23.714053	86.34699	141.94				
	142.05					23.714683	86.346698	142.19				
	143.02					23.714995	86.34652	143.16				
	142.70					23.713875	86.34671	142.84				
	143.92					23.713682	86.346711	144.06				
	141.57					23.714403	86.346235	141.72				
	143.12					23.714858	86.346063	143.26				
	141.94					23.713852	86.346312	142.08				
	142.95					23.713575	86.346324	143.09				
DHN_DR_PRE_06	144.27	144.06	510395	157	**DHN_DR_POS_06**	23.7086	86.344005	144.42	144.21	510399	0.15	0.0766
	142.65					23.708771	86.343552	142.79				
	145.33					23.709022	86.342687	145.47				
	142.33					23.708466	86.343175	142.47				
	144.68					23.708047	86.34387	144.82				
	143.48					23.707932	86.343608	143.62				
	142.83					23.707912	86.342514	142.97				
	144.66					23.70786	86.342232	144.80				
	143.26					23.707666	86.342309	143.40				
	142.02					23.707271	86.34299	142.16				
	143.19					23.707063	86.343403	143.33				
	142.07					23.707073	86.342838	142.21				
	142.62					23.7072	86.342169	142.76				
	143.43					23.707308	86.341933	143.57				
	142.76					23.707105	86.342022	142.91				
	141.96					23.706746	86.342199	142.10				
	144.41					23.706117	86.342784	144.56				
	142.06					23.70644	86.341985	142.21				
	141.90					23.70653	86.341763	142.04				
	142.97					23.706615	86.341336	143.11				
	142.16					23.70619	86.34147	142.30				
	142.01					23.706059	86.341509	142.15				
	145.21					23.705314	86.341718	145.35				
	142.39					23.70538	86.340681	142.53				
	142.82					23.705837	86.340065	142.96				
	142.29					23.704974	86.340162	142.43				
	147.00					23.704405	86.340033	147.15				
	142.85					23.704761	86.339265	142.99				
	147.27					23.705351	86.338683	147.42				
	143.37					23.704484	86.338971	143.51				
	146.59					23.70401	86.338994	146.73				
	142.27					23.704429	86.338062	142.42				
	143.86					23.705003	86.337537	144.01				
	142.34					23.704089	86.337307	142.48				
	145.30					23.703656	86.336975	145.45				
	142.14					23.704372	86.336784	142.28				
	143.96					23.705071	86.336632	144.11				
	142.57					23.704631	86.336381	142.71				
	145.53					23.703995	86.335997	145.68				
	143.20					23.704669	86.335653	143.34				
	147.48					23.705374	86.335363	147.63				
	143.71					23.704859	86.334876	143.85				
	146.98					23.704505	86.334648	147.12				
	147.94					23.704443	86.334569	148.09				
	146.48					23.704664	86.334402	146.63				
	144.35					23.705191	86.334311	144.50				
	147.31					23.705597	86.334227	147.46				
	147.80					23.705724	86.3341	147.95				
	144.17					23.705191	86.333786	144.31				

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	146.56					23.704829	86.333564	146.71				
	143.95					23.704982	86.333517	144.09				
	146.50					23.70591	86.333429	146.65				
	144.43					23.7055	86.333209	144.57				
	144.32					23.705122	86.332963	144.46				
	144.36					23.705329	86.332895	144.51				
	144.28					23.705823	86.33285	144.42				
	149.18					23.706185	86.332811	149.33				
	144.02					23.70564	86.332325	144.17				
	144.54					23.705418	86.332178	144.69				
	145.21					23.705305	86.331832	145.35				
	145.29					23.706123	86.331854	145.44				
	148.14					23.706553	86.331797	148.29				
	144.40					23.706089	86.331273	144.54				
	144.79					23.705553	86.330753	144.94				
	144.72					23.706174	86.330751	144.86				
	150.42					23.706882	86.330773	150.57				
	145.83					23.706704	86.330491	145.97				
	143.36					23.706311	86.329682	143.50				
	146.59					23.706065	86.32906	146.74				
	141.82					23.706716	86.329199	141.96				
	141.64					23.707248	86.329248	141.78				
	141.87					23.707588	86.329227	142.01				
	141.31					23.70726	86.328693	141.45				
	141.62					23.707158	86.32844	141.77				
	145.63					23.706879	86.327856	145.77				
	142.42					23.707516	86.328089	142.56				
	145.41					23.708032	86.328202	145.56				
	146.34					23.707781	86.326864	146.48				
	147.07					23.70774	86.326596	147.22				
	143.62					23.708598	86.326811	143.76				
	146.90					23.709184	86.326931	147.04				
	141.54					23.708485	86.325876	141.68				
	144.23					23.708467	86.325575	144.38				
	140.39					23.709225	86.325849	140.53				
	146.19					23.709993	86.325886	146.33				
	141.35					23.709427	86.325202	141.50				
	145.70					23.709124	86.324717	145.85				
	141.60					23.709705	86.324842	141.74				
	147.63					23.710642	86.325116	147.78				
	146.05					23.710624	86.324383	146.19				
	145.82					23.710535	86.323925	145.97				
	150.73					23.710357	86.32315	150.88				
	144.22					23.711161	86.323502	144.37				
	147.43					23.711872	86.323494	147.58				
	140.86					23.711564	86.322506	141.01				
	142.57					23.711536	86.322157	142.71				
	144.49					23.711537	86.321704	144.64				
	142.05					23.711911	86.321816	142.20				
	147.82					23.712963	86.322026	147.97				
	142.94					23.712892	86.320716	143.08				
	144.19					23.712891	86.319869	144.34				
	144.32					23.713708	86.320466	144.47				
	146.48					23.714017	86.32058	146.62				
	144.32					23.714017	86.320159	144.46				
	142.84					23.713945	86.319815	142.98				
	142.31					23.713909	86.318814	142.45				
	145.25					23.714836	86.319425	145.40				
	141.59					23.715044	86.318582	141.73				
	139.56					23.715031	86.317983	139.70				
	139.04					23.715078	86.317553	139.18				
	140.16					23.715051	86.317402	140.30				
	139.55					23.715284	86.317622	139.69				
	140.17					23.715395	86.31774	140.31				
	144.42					23.716119	86.318248	144.56				
	139.64					23.715512	86.317539	139.78				
	142.94					23.715332	86.317106	143.08				
DHN_DR_PRE_07	144.71	147	194005	166	**DHN_DR_POS_07**	23.713517	86.275935	144.84	147.14	194006	0.14	0.0272
	146.76					23.714312	86.275555	146.89				
	147.92					23.714443	86.275543	148.05				
	144.02					23.714226	86.276275	144.15				
	144.77					23.714059	86.276807	144.90				

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	145.90					23.714033	86.27695	146.03				
	145.06					23.714189	86.277037	145.19				
	144.09					23.714803	86.276987	144.22				
	147.47					23.715268	86.276958	147.61				
	144.31					23.714875	86.277325	144.44				
	146.56					23.714531	86.277653	146.70				
	147.21					23.714459	86.277763	147.34				
	146.67					23.714674	86.277894	146.80				
	146.19					23.715274	86.277919	146.33				
	147.57					23.715824	86.277973	147.71				
	147.52					23.715145	86.278582	147.66				
	148.72					23.714981	86.278698	148.86				
	147.57					23.715268	86.278821	147.70				
	146.53					23.716137	86.27902	146.66				
	149.08					23.716577	86.279214	149.22				
	146.16					23.715665	86.279605	146.30				
	147.51					23.715551	86.279651	147.64				
	147.64					23.71631	86.280052	147.77				
	150.51					23.716963	86.280196	150.64				
	146.15					23.716663	86.280762	146.28				
	149.35					23.716408	86.281241	149.48				
	146.83					23.717097	86.281419	146.96				
	147.56					23.717727	86.281851	147.70				
	149.24					23.716962	86.282439	149.37				
	148.34					23.717207	86.282751	148.47				
	150.00					23.718153	86.283051	150.13				
	147.92					23.717515	86.283413	148.05				
	149.30					23.717374	86.283595	149.44				
	148.04					23.71763	86.283727	148.17				
	148.21					23.718385	86.283911	148.34				
	148.29					23.718726	86.283992	148.43				
	147.34					23.717998	86.284309	147.47				
	148.25					23.717747	86.284423	148.39				
	145.75					23.718255	86.284867	145.88				
	143.71					23.719182	86.285132	143.84				
	144.76					23.718495	86.285296	144.89				
	146.66					23.718169	86.285433	146.79				
	145.38					23.718607	86.285739	145.51				
	147.89					23.719413	86.285892	148.02				
	146.08					23.718795	86.286215	146.21				
	146.36					23.718599	86.286341	146.49				
	147.07					23.718374	86.28647	147.20				
	146.23					23.718785	86.286628	146.36				
	145.42					23.71903	86.286747	145.55				
	146.76					23.719692	86.286986	146.89				
	145.89					23.718993	86.287063	146.02				
	147.30					23.718774	86.28712	147.44				
	148.56					23.718599	86.287173	148.70				
	146.20					23.718993	86.287372	146.33				
	146.81					23.71984	86.287751	146.94				
	145.43					23.719362	86.287753	145.56				
	146.54					23.719014	86.287797	146.67				
	148.67					23.718825	86.287817	148.80				
	145.24					23.719138	86.288034	145.37				
	145.69					23.719821	86.288315	145.82				
	146.10					23.719985	86.288374	146.23				
	146.56					23.719577	86.288556	146.70				
	146.30					23.719226	86.28861	146.43				
	148.19					23.71904	86.288639	148.33				
	148.10					23.719613	86.288828	148.23				
	152.36					23.720227	86.28913	152.49				
	149.10					23.71939	86.289107	149.23				
	149.15					23.71922	86.289195	149.29				
	146.45					23.71909	86.288421	146.59				
	146.88					23.718745	86.286871	147.01				
	145.56					23.718466	86.285973	145.69				
	146.10					23.719815	86.288089	146.24				
	146.75					23.71811	86.284986	146.88				
DHN_DR_PRE_08	149.81	150.76	87838	165	**DHN_DR_POS_08**	23.710503	86.266062	149.93	150.88	87840	0.12	0.0105
	152.92					23.711024	86.265976	153.04				
	155.23					23.711217	86.265943	155.35				
	153.45					23.711094	86.266119	153.57				

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	152.60					23.711033	86.266217	152.72				
	149.36					23.710642	86.266681	149.48				
	152.32					23.711068	86.266571	152.44				
	155.35					23.711353	86.266487	155.48				
	152.92					23.71118	86.266725	153.05				
	151.81					23.711108	86.266815	151.93				
	146.80					23.710752	86.267299	146.92				
	151.37					23.711216	86.267121	151.49				
	153.45					23.711433	86.267124	153.57				
	154.49					23.711555	86.267149	154.61				
	152.18					23.711406	86.267333	152.30				
	150.92					23.711315	86.267413	151.04				
	147.87					23.710948	86.267836	147.99				
	150.56					23.711347	86.267797	150.68				
	152.12					23.711565	86.26779	152.24				
	154.01					23.711759	86.267834	154.13				
	152.01					23.711667	86.268021	152.13				
	150.53					23.711476	86.268278	150.65				
	149.03					23.711176	86.268613	149.15				
	150.29					23.711645	86.268557	150.41				
	153.72					23.711906	86.268557	153.84				
	154.73					23.711983	86.26858	154.86				
	153.81					23.711942	86.268704	153.93				
	150.57					23.711752	86.268945	150.69				
	148.40					23.711424	86.269309	148.52				
	153.98					23.712065	86.269207	154.10				
	155.95					23.712212	86.269189	156.08				
	154.33					23.712161	86.269382	154.46				
	151.40					23.711973	86.269658	151.53				
	148.74					23.711668	86.270032	148.86				
	150.91					23.712134	86.270051	151.03				
	151.57					23.712316	86.27011	151.70				
	152.46					23.712526	86.270228	152.59				
	149.96					23.712316	86.270528	150.08				
	148.48					23.712163	86.270683	148.60				
	146.52					23.711951	86.271009	146.63				
	150.81					23.712569	86.270878	150.93				
	152.84					23.712689	86.270832	152.97				
	151.17					23.712633	86.271054	151.29				
	146.98					23.712414	86.271601	147.10				
	146.75					23.712249	86.271951	146.87				
	149.71					23.712728	86.271924	149.83				
	154.83					23.713124	86.271979	154.96				
	149.55					23.712802	86.272273	149.67				
	146.06					23.712437	86.272623	146.17				
	149.16					23.713009	86.272831	149.28				
	154.32					23.71355	86.27296	154.44				
	146.84					23.713125	86.273526	146.96				
	146.83					23.712814	86.273831	146.94				
	147.62					23.713439	86.273769	147.74				
	153.86					23.713928	86.273751	153.98				
	145.43					23.713375	86.27412	145.54				
	146.17					23.71309	86.274342	146.29				
	147.09					23.713621	86.274268	147.21				
	151.07					23.714148	86.274279	151.19				
	146.74					23.713637	86.274485	146.86				
	145.51					23.713232	86.274651	145.63				
DHN_DR_PRE_09	149.56	152.44	233161	150	**DHN_DR_POS_09**	23.710405	86.256428	149.63	152.51	233166	0.07	0.0163
	148.80					23.710539	86.256439	148.88				
	147.85					23.710713	86.256445	147.92				
	152.55					23.711695	86.256485	152.62				
	148.29					23.710928	86.256003	148.37				
	148.69					23.710713	86.255894	148.77				
	150.11					23.710544	86.255743	150.19				
	148.62					23.71075	86.255752	148.69				
	149.11					23.711022	86.2557	149.19				
	153.61					23.7118	86.255644	153.68				
	150.04					23.711224	86.255362	150.12				
	149.17					23.710984	86.255213	149.25				
	149.89					23.710695	86.255023	149.96				
	149.20					23.710894	86.254849	149.27				
	149.65					23.711445	86.254682	149.73				

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	154.61					23.712249	86.254379	154.69				
	148.42					23.711546	86.254235	148.49				
	149.10					23.711246	86.254119	149.18				
	150.32					23.710824	86.253938	150.40				
	150.31					23.711242	86.253782	150.38				
	150.72					23.711509	86.253692	150.79				
	157.27					23.71219	86.253347	157.35				
	152.44					23.711401	86.253127	152.52				
	152.09					23.711165	86.25308	152.16				
	151.73					23.710848	86.253004	151.81				
	152.38					23.711092	86.252828	152.46				
	152.64					23.711257	86.252741	152.72				
	155.68					23.711936	86.2524	155.76				
	153.15					23.711203	86.252216	153.23				
	153.65					23.710878	86.252172	153.72				
	155.76					23.710675	86.252154	155.84				
	154.37					23.710846	86.251881	154.45				
	154.30					23.710947	86.251778	154.38				
	152.14					23.711571	86.251512	152.22				
	153.23					23.711814	86.251348	153.31				
	151.94					23.711571	86.251255	152.02				
	153.21					23.711342	86.251087	153.28				
	156.11					23.710907	86.250967	156.19				
	159.04					23.710606	86.250866	159.12				
	160.21					23.710486	86.250819	160.29				
	158.10					23.710645	86.250676	158.18				
	155.17					23.710894	86.250533	155.25				
	153.08					23.71126	86.25039	153.16				
	151.92					23.711681	86.250182	151.99				
	152.37					23.711322	86.24993	152.44				
	152.40					23.710826	86.249742	152.48				
	154.37					23.710672	86.24969	154.45				
	158.25					23.710369	86.249544	158.33				
	152.65					23.710741	86.249344	152.73				
	152.37					23.711234	86.249187	152.45				
	152.75					23.711353	86.249147	152.83				
	153.18					23.711593	86.248968	153.26				
	151.40					23.711246	86.248746	151.48				
	150.32					23.710752	86.248465	150.40				
	156.22					23.710278	86.248316	156.30				
	150.54					23.710724	86.24809	150.61				
	149.46					23.710824	86.247976	149.53				
	152.08					23.711532	86.247802	152.16				
	152.36					23.71051	86.247101	152.44				
	153.66					23.710344	86.246995	153.74				
	155.43					23.710095	86.246801	155.51				
	153.54					23.710293	86.246705	153.61				
	148.92					23.711098	86.246488	148.99				
	149.57					23.71159	86.246354	149.65				
	150.69					23.711813	86.24627	150.76				
	150.74					23.711707	86.245968	150.81				
	150.48					23.711496	86.245747	150.55				
	149.61					23.710908	86.245516	149.69				
	153.51					23.710521	86.245444	153.58				
	151.71					23.711399	86.245093	151.78				
	152.99					23.712235	86.244803	153.07				
	154.66					23.711387	86.244377	154.74				
	155.76					23.711094	86.244268	155.84				
	156.12					23.71104	86.244222	156.20				
	155.88					23.711197	86.244045	155.95				
	153.72					23.711907	86.2439	153.80				
	153.87					23.712455	86.243762	153.95				
	151.14					23.711639	86.243326	151.22				
	153.81					23.711318	86.243156	153.89				
	153.64					23.711337	86.243148	153.72				
	152.91					23.71218	86.242821	152.99				
	154.69					23.712433	86.242434	154.77				
	154.09					23.71137	86.24208	154.17				
	153.61					23.711331	86.242785	153.69				
	153.62					23.711331	86.242832	153.70				
	153.76					23.711318	86.242893	153.84				
	155.23					23.711248	86.243773	155.30				

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	154.04					23.710873	86.24464	154.11				
	152.58					23.71068	86.24526	152.65				
	152.20					23.710437	86.245974	152.28				
	153.03					23.710351	86.246382	153.10				
	154.09					23.710345	86.247229	154.17				
	150.96					23.710701	86.247857	151.04				
	149.68					23.710786	86.248194	149.76				
	152.40					23.711303	86.249075	152.47				
	152.75					23.71136	86.249273	152.83				
	152.53					23.711048	86.252722	152.60				
	151.60					23.711231	86.253412	151.68				
	149.06					23.711426	86.254045	149.13				
	149.14					23.711454	86.254464	149.22				
	148.95					23.710637	86.256051	149.02				
	149.31					23.710489	86.25633	149.39				
DHN_DR_PRE_10	151.55	152.58	143735	162	**DHN_DR_POS_10**	23.709908	86.230824	151.86	152.89	143738	0.31	0.0446
	150.87					23.710108	86.230792	151.18				
	151.13					23.710223	86.230773	151.43				
	152.69					23.710831	86.230723	153.00				
	154.55					23.711084	86.230691	154.86				
	156.00					23.711279	86.230681	156.31				
	153.95					23.711006	86.230815	154.25				
	152.67					23.71082	86.230844	152.97				
	151.87					23.710217	86.23098	152.18				
	151.92					23.710148	86.231009	152.23				
	152.33					23.710002	86.231105	152.63				
	152.63					23.710648	86.231118	152.94				
	154.27					23.71108	86.231118	154.58				
	155.08					23.711213	86.231145	155.39				
	154.29					23.711114	86.231357	154.60				
	153.12					23.710911	86.231448	153.43				
	154.01					23.710462	86.231703	154.32				
	155.13					23.710231	86.23184	155.44				
	152.52					23.710729	86.231869	152.83				
	153.21					23.711093	86.23187	153.51				
	154.13					23.711279	86.231863	154.44				
	153.30					23.711191	86.231975	153.61				
	152.39					23.711068	86.232063	152.70				
	152.21					23.710651	86.232226	152.52				
	154.26					23.710409	86.2323	154.57				
	154.78					23.710353	86.232332	155.10				
	149.91					23.710839	86.232448	150.22				
	150.68					23.711016	86.23247	150.98				
	151.44					23.711181	86.232478	151.75				
	151.81					23.71127	86.23252	152.12				
	151.22					23.711102	86.232642	151.52				
	150.98					23.711022	86.2327	151.28				
	155.87					23.710447	86.233072	156.18				
	152.34					23.711146	86.233265	152.65				
	152.84					23.711331	86.233286	153.15				
	153.30					23.711513	86.233354	153.60				
	152.29					23.711243	86.233548	152.60				
	151.21					23.710787	86.233817	151.51				
	154.97					23.710505	86.234052	155.28				
	150.39					23.710986	86.2341	150.69				
	151.39					23.711292	86.234142	151.70				
	152.39					23.711564	86.234118	152.70				
	153.53					23.711734	86.234147	153.83				
	152.11					23.711644	86.234384	152.41				
	151.18					23.711415	86.234529	151.49				
	150.32					23.711112	86.234642	150.62				
	149.79					23.710877	86.23473	150.09				
	153.79					23.710586	86.234861	154.10				
	149.91					23.71098	86.234928	150.21				
	150.26					23.711313	86.235018	150.56				
	152.22					23.711745	86.234731	152.53				
	151.48					23.711761	86.235226	151.78				
	153.24					23.711898	86.234986	153.54				
	153.78					23.711996	86.23565	154.09				
	151.16					23.711756	86.235468	151.46				
	149.94					23.71133	86.235502	150.24				

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	149.79					23.71116	86.235639	150.09				
	153.16					23.710665	86.235962	153.47				
	149.84					23.711417	86.236024	150.14				
	152.34					23.71189	86.23595	152.65				
	155.69					23.712175	86.235966	156.01				
	152.77					23.711935	86.236243	153.07				
	150.31					23.711347	86.236498	150.61				
	153.56					23.71074	86.23683	153.87				
	151.53					23.711563	86.237019	151.84				
	153.16					23.711818	86.237084	153.46				
	158.12					23.712196	86.237495	158.44				
	151.88					23.711628	86.237811	152.18				
	151.62					23.711166	86.238039	151.93				
	151.92					23.710871	86.238192	152.22				
	150.15					23.71127	86.238363	150.45				
	149.87					23.711752	86.238531	150.17				
	155.44					23.712244	86.238757	155.75				
	150.39					23.711747	86.239011	150.69				
	151.00					23.711187	86.23921	151.31				
	151.73					23.711022	86.239301	152.03				
	151.54					23.711668	86.239673	151.84				
	157.24					23.712302	86.239973	157.56				
	152.90					23.711705	86.240068	153.20				
	153.10					23.711498	86.240201	153.41				
	154.84					23.711149	86.240359	155.15				
	152.30					23.711637	86.24047	152.61				
	157.34					23.712273	86.240508	157.65				
DHN_DR_PRE_11	156.46	154.17	514492	194	**DHN_DR_POS_11**	23.716145	86.202565	156.93	154.64	514494	0.47	0.2418
	154.06					23.717167	86.203277	154.52				
	157.75					23.717614	86.203528	158.23				
	155.31					23.717273	86.203573	155.78				
	154.69					23.717024	86.203615	155.16				
	155.43					23.716061	86.202998	155.90				
	155.90					23.71596	86.202959	156.37				
	154.91					23.715914	86.203224	155.37				
	155.74					23.717104	86.203868	156.21				
	158.07					23.717341	86.204102	158.55				
	155.12					23.716912	86.204065	155.59				
	153.40					23.716208	86.203857	153.86				
	154.05					23.715548	86.203751	154.51				
	153.43					23.716416	86.204314	153.89				
	155.51					23.716837	86.204388	155.98				
	159.33					23.717247	86.204449	159.81				
	157.20					23.716933	86.204609	157.67				
	155.29					23.716727	86.204647	155.76				
	152.31					23.715936	86.204637	152.77				
	152.00					23.715717	86.204667	152.45				
	152.30					23.715218	86.204638	152.76				
	151.63					23.715612	86.204941	152.09				
	151.79					23.715701	86.2051	152.24				
	158.99					23.716693	86.205831	159.47				
	154.56					23.716073	86.205681	155.02				
	153.05					23.715766	86.205631	153.52				
	152.90					23.715418	86.205568	153.36				
	153.30					23.714854	86.205525	153.76				
	153.37					23.715332	86.205903	153.83				
	152.60					23.715601	86.206224	153.06				
	151.66					23.715789	86.206617	152.12				
	159.17					23.716232	86.207204	159.65				
	152.28					23.715547	86.207037	152.74				
	151.95					23.715018	86.207	152.41				
	152.86					23.714303	86.207099	153.32				
	152.48					23.714834	86.207409	152.93				
	153.52					23.715205	86.207811	153.98				
	161.60					23.715855	86.208584	162.09				
	153.11					23.714926	86.208515	153.58				
	153.93					23.714477	86.208491	154.40				
	154.16					23.713909	86.208523	154.62				
	154.52					23.714438	86.209152	154.99				
	154.63					23.714654	86.20933	155.10				
	160.84					23.715268	86.210206	161.32				

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Atmos Sustainable Solutions P. Ltd.

	151.44					23.714048	86.210012	151.90				
	151.03					23.713602	86.209942	151.48				
	154.74					23.714194	86.210987	155.20				
	158.99					23.714596	86.212409	159.47				
	153.48					23.713715	86.212106	153.95				
	152.14					23.71309	86.211957	152.60				
	153.12					23.713223	86.212371	153.58				
	153.06					23.713832	86.212949	153.52				
	156.08					23.7142	86.213588	156.55				
	153.11					23.713787	86.213491	153.57				
	152.28					23.713548	86.213464	152.74				
	152.31					23.712684	86.213346	152.77				
	152.69					23.713396	86.213891	153.15				
	154.18					23.713548	86.213981	154.65				
	161.58					23.713948	86.214431	162.07				
	154.81					23.713417	86.214759	155.28				
	152.07					23.712735	86.214898	152.53				
	151.99					23.712138	86.214964	152.45				
	152.97					23.712962	86.215486	153.43				
	159.24					23.713493	86.215879	159.72				
	151.65					23.712523	86.215965	152.11				
	151.24					23.711957	86.215931	151.69				
	151.13					23.711787	86.215934	151.58				
	150.61					23.712188	86.216355	151.06				
	150.93					23.712338	86.216492	151.39				
	160.37					23.71318	86.217179	160.86				
	150.93					23.712327	86.21695	151.38				
	149.99					23.712087	86.216902	150.44				
	148.90					23.711863	86.216815	149.35				
	148.79					23.711523	86.216749	149.24				
	150.86					23.711997	86.217463	151.32				
	153.56					23.71213	86.217841	154.02				
	161.30					23.712809	86.218711	161.78				
	156.70					23.711867	86.21853	157.18				
	156.16					23.711607	86.218423	156.63				
	154.06					23.711238	86.218231	154.52				
	155.20					23.711389	86.218679	155.67				
	155.50					23.711579	86.219079	155.97				
	161.90					23.712388	86.220025	162.39				
	157.82					23.711711	86.219745	158.30				
	155.36					23.711303	86.219436	155.83				
	154.64					23.711007	86.219255	155.11				
	154.67					23.711115	86.219726	155.13				
	156.16					23.711954	86.220676	156.63				
	157.71					23.712159	86.220943	158.19				
	154.45					23.711811	86.220948	154.92				
	150.82					23.710933	86.220824	151.27				
	151.66					23.710731	86.220827	152.11				
	149.92					23.710922	86.221144	150.37				
	155.44					23.71161	86.221552	155.91				
	159.00					23.711835	86.222067	159.48				
	155.36					23.711061	86.222401	155.83				
	156.03					23.710416	86.222499	156.50				
	155.57					23.710749	86.223024	156.04				
	155.81					23.711141	86.223809	156.28				
	157.66					23.711416	86.224346	158.14				
	156.71					23.711298	86.224471	157.19				
	153.31					23.710679	86.224404	153.77				
	153.47					23.710234	86.224374	153.93				
	153.15					23.710451	86.225117	153.61				
	154.84					23.710966	86.225652	155.31				
	155.78					23.711033	86.225954	156.25				
	155.03					23.71078	86.226112	155.50				
	153.13					23.710261	86.226255	153.59				
	153.42					23.709697	86.226402	153.88				
	151.91					23.710034	86.227122	152.36				
	156.10					23.710473	86.227762	156.57				
	152.16					23.709865	86.227786	152.62				
	154.26					23.709413	86.227859	154.73				
	150.01					23.71004	86.228354	150.46				
	153.40					23.710388	86.228678	153.86				
	152.18					23.709586	86.228894	152.64				

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	154.10					23.709342	86.228979	154.57				
	149.08					23.710047	86.22911	149.53				
	153.51					23.710507	86.229129	153.97				
	154.48					23.710655	86.229257	154.95				
	153.54					23.710668	86.229534	154.00				
	154.02					23.710827	86.229683	154.48				
	152.95					23.710834	86.229916	153.41				
	152.46					23.710621	86.229737	152.92				
	148.97					23.710053	86.229482	149.41				
	153.46					23.70943	86.229331	153.92				
	152.21					23.709609	86.229863	152.67				
	150.07					23.710298	86.229946	150.52				
DHN_DR_PRE_12	158.29	156.42	767430	282	**DHN_DR_POS_12**	23.726461	86.17851	158.93	157.05	767431	0.63	0.4835
	157.42					23.726571	86.178596	158.05				
	157.01					23.726886	86.178864	157.64				
	157.22					23.727116	86.179039	157.85				
	160.81					23.72794	86.179629	161.46				
	157.81					23.726977	86.17928	158.44				
	157.60					23.726789	86.179219	158.24				
	159.22					23.72624	86.178994	159.86				
	160.39					23.726944	86.179924	161.03				
	159.40					23.727507	86.18054	160.04				
	160.34					23.726493	86.180204	160.98				
	157.08					23.726141	86.179955	157.71				
	156.07					23.725867	86.179789	156.70				
	154.91					23.725888	86.180052	155.53				
	155.78					23.725958	86.180251	156.40				
	161.59					23.726485	86.181268	162.24				
	165.28					23.726937	86.18215	165.94				
	161.86					23.726196	86.18165	162.51				
	156.26					23.725537	86.180984	156.88				
	155.56					23.72538	86.180873	156.18				
	157.44					23.725368	86.181305	158.07				
	165.07					23.725732	86.182304	165.74				
	162.20					23.726524	86.183289	162.85				
	162.47					23.72658	86.183517	163.12				
	161.54					23.726329	86.183534	162.19				
	157.61					23.725276	86.183376	158.24				
	156.12					23.724353	86.183174	156.75				
	157.29					23.725512	86.183909	157.92				
	158.39					23.725953	86.184161	159.03				
	160.65					23.726175	86.184338	161.30				
	163.67					23.72639	86.184578	164.33				
	158.52					23.725939	86.184511	159.16				
	157.11					23.725698	86.184494	157.74				
	156.46					23.724137	86.183933	157.09				
	156.24					23.725171	86.184646	156.87				
	157.09					23.725635	86.184851	157.72				
	157.65					23.725824	86.185049	158.29				
	163.18					23.726122	86.185277	163.83				
	158.55					23.725713	86.185268	159.19				
	157.67					23.725473	86.185254	158.31				

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	157.10					23.724318	86.185038	157.74				
	157.39					23.723639	86.184919	158.03				
	156.26					23.725103	86.185749	156.89				
	160.92					23.725695	86.186109	161.56				
	161.70					23.725816	86.186265	162.35				
	155.94					23.725071	86.186148	156.57				
	155.50					23.723746	86.185779	156.13				
	156.11					23.723195	86.185627	156.74				
	155.87					23.723253	86.18568	156.50				
	154.61					23.724092	86.186478	155.23				
	155.42					23.724631	86.186924	156.04				
	159.37					23.725286	86.18727	160.01				
	161.40					23.725466	86.187384	162.05				
	156.35					23.724537	86.187671	156.98				
	155.34					23.724134	86.187695	155.96				
	154.28					23.722651	86.187597	154.90				
	158.26					23.721317	86.187415	158.90				
	155.15					23.722028	86.18786	155.78				
	153.71					23.722367	86.188225	154.33				
	154.62					23.723531	86.188787	155.24				
	154.97					23.723828	86.189163	155.60				
	160.65					23.724506	86.189755	161.30				
	154.81					23.723144	86.189628	155.43				
	153.78					23.721941	86.189244	154.39				
	154.73					23.721317	86.188865	155.35				
	159.76					23.720152	86.188344	160.40				
	155.50					23.720827	86.189118	156.12				
	154.05					23.721389	86.189818	154.67				
	154.17					23.722129	86.190315	154.79				
	156.86					23.723267	86.190996	157.49				
	158.45					23.723558	86.191224	159.08				
	154.09					23.722771	86.191328	154.71				
	154.26					23.721616	86.190883	154.88				
	153.51					23.720941	86.190638	154.13				
	153.38					23.720304	86.190247	154.00				
	155.11					23.7195	86.189631	155.73				
	153.38					23.720081	86.190665	154.00				
	153.44					23.720784	86.191628	154.06				
	153.10					23.721204	86.192192	153.72				
	154.64					23.722075	86.192993	155.26				
	158.61					23.722325	86.193663	159.25				
	153.46					23.720558	86.19314	154.08				
	154.13					23.719915	86.192827	154.75				
	156.21					23.719132	86.192725	156.84				
	155.19					23.719205	86.192854	155.81				
	152.41					23.720259	86.193924	153.02				
	155.61					23.721618	86.194719	156.23				
	153.50					23.720516	86.194693	154.11				
	151.29					23.719366	86.194321	151.89				
	152.27					23.718985	86.194089	152.89				
	153.95					23.720085	86.195227	154.56				
	155.66					23.721062	86.195902	156.29				
	154.91					23.71998	86.195653	155.54				
	155.95					23.718723	86.195011	156.57				
	154.76					23.719914	86.196097	155.38				
	155.68					23.720447	86.196779	156.30				
	155.58					23.72042	86.196773	156.21				
	152.24					23.718711	86.196243	152.86				
	149.83					23.718898	86.19694	150.43				
	154.19					23.719835	86.197972	154.81				
	149.59					23.719294	86.197825	150.19				
	150.85					23.718248	86.197687	151.46				
	148.64					23.719081	86.198488	149.24				
	156.41					23.719417	86.198994	157.04				
	149.42					23.718285	86.198583	150.02				
	151.17					23.717901	86.198441	151.78				
	153.36					23.718069	86.198905	153.97				
	160.57					23.718837	86.200273	161.22				
	154.95					23.717711	86.199049	155.57				
	153.39					23.717752	86.199836	154.00				
	159.61					23.718624	86.200596	160.25				
	152.75					23.717369	86.199946	153.36				

State Level Environment Impact Assessment Authority ★ Uttarakhand ★ Ranchi
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Atmos Sustainable Solutions P. Ltd.

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							
JAMUNIYA RIVER					JAMUNIYA 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
DHN_JM_PRE_01	219.24	221.72	171721	117	DHN_JM_POS_01	23.881904	86.115225	219.35	221.83	171726	0.11	0.0189
	220.58					23.881973	86.114778	220.69				
	222.49					23.882084	86.114537	222.61				
	219.87					23.882309	86.114879	219.98				
	219.28					23.882421	86.11517	219.39				
	220.09					23.882535	86.11546	220.21				
	219.85					23.88264	86.11516	219.96				
	219.73					23.882667	86.115024	219.84				
	222.60					23.88291	86.11468	222.71				
	221.03					23.882925	86.115176	221.14				
	221.13					23.88291	86.115429	221.24				
	221.47					23.882955	86.115844	221.58				
	221.72					23.883133	86.11563	221.83				
	222.29					23.883311	86.115447	222.40				
	223.59					23.883594	86.115089	223.70				
	222.12					23.883516	86.115633	222.23				
	221.88					23.883441	86.116033	221.99				
	222.45					23.883344	86.116341	222.56				
	221.13					23.883761	86.116025	221.24				
	221.20					23.883969	86.115817	221.31				
	222.06					23.884134	86.115638	222.17				
	219.70					23.884191	86.116183	219.81				
	218.43					23.884092	86.116634	218.54				
	221.37					23.883963	86.117083	221.48				
	219.18					23.884427	86.116759	219.29				
	220.30					23.884621	86.116405	220.41				
	221.02					23.884686	86.116226	221.13				
	219.97					23.884702	86.116775	220.08				
	220.44					23.884652	86.117108	220.55				
	222.85					23.884287	86.117696	222.97				
	220.92					23.884716	86.117515	221.03				
	220.38					23.885026	86.117239	220.49				
	221.84					23.88525	86.117268	221.95				
	220.36					23.885094	86.117732	220.47				
	220.87					23.884808	86.118033	220.98				
	221.86					23.884671	86.11833	221.97				
	220.06					23.885059	86.118236	220.17				
	221.85					23.885596	86.118128	221.96				
	221.07					23.885354	86.118525	221.19				
	222.75					23.885076	86.118979	222.86				
	221.28					23.885483	86.118702	221.39				
	221.27					23.885755	86.118583	221.38				
	221.83					23.88593	86.118584	221.95				
	220.69					23.885797	86.118866	220.80				
	220.68					23.885695	86.119221	220.79				
	222.42					23.885569	86.119795	222.54				

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	220.59					23.885898	86.119359	220.70				
	220.99					23.886058	86.119183	221.10				
	222.33					23.886249	86.119019	222.44				
	222.12					23.886314	86.119368	222.24				
	222.09					23.886354	86.119663	222.20				
	222.75					23.886548	86.120251	222.86				
	222.45					23.886713	86.119689	222.56				
	222.81					23.886842	86.119391	222.92				
	222.85					23.886922	86.119301	222.96				
	221.34					23.887041	86.119641	221.45				
	221.64					23.887185	86.120276	221.75				
	219.07					23.887398	86.119846	219.18				
	220.25					23.887478	86.119524	220.36				
	220.74					23.887711	86.11931	220.85				
	220.20					23.887912	86.119481	220.31				
	220.40					23.888136	86.119662	220.51				
	223.21					23.888633	86.119954	223.32				
	219.87					23.888345	86.119417	219.98				
	219.83					23.888203	86.119041	219.94				
	221.17					23.888145	86.118752	221.28				
	220.81					23.88844	86.11876	220.92				
	222.17					23.888753	86.118722	222.28				
	223.57					23.889126	86.118679	223.68				
	222.14					23.888661	86.118448	222.25				
	222.36					23.888237	86.118261	222.47				
	222.15					23.888467	86.118063	222.27				
	223.45					23.888866	86.117731	223.56				
	222.41					23.888501	86.117667	222.52				
	223.81					23.888012	86.11752	223.92				
	222.07					23.888246	86.117139	222.18				
	221.54					23.888441	86.116791	221.65				
	222.16					23.888188	86.116738	222.27				
	226.39					23.887632	86.116617	226.50				
	223.51					23.887847	86.11638	223.63				
	221.89					23.888096	86.116135	222.00				
	221.25					23.887604	86.115968	221.36				
	223.05					23.887207	86.115828	223.16				
	220.94					23.887658	86.115598	221.05				
	221.61					23.887855	86.115578	221.72				
	221.46					23.88759	86.115325	221.57				
	222.95					23.887102	86.115066	223.06				
	223.55					23.886797	86.114955	223.66				
	223.83					23.886617	86.114735	223.94				
	223.29					23.886808	86.114564	223.40				
	223.22					23.887056	86.114453	223.33				
	223.40					23.887283	86.114324	223.51				
	223.27					23.886999	86.114229	223.39				
	222.95					23.886714	86.114133	223.06				
	224.18					23.886435	86.114019	224.29				
	223.09					23.886833	86.113968	223.20				
	223.36					23.887062	86.113737	223.48				
	223.35					23.887048	86.113499	223.46				
	222.89					23.886679	86.113319	223.00				
	223.80					23.886393	86.113288	223.91				

DHN_JM_PRE_02	213.45	213.79	42368	102	**DHN_JM_POS_02**	23.860926	86.136862	213.58	213.92	42370	0.13	0.0055
	213.47					23.861125	86.136925	213.60				
	213.52					23.861244	86.136955	213.65				
	213.54					23.861321	86.137002	213.67				
	213.23					23.861138	86.137087	213.36				
	212.96					23.860969	86.137118	213.09				
	212.70					23.860841	86.137158	212.83				
	212.66					23.860962	86.137263	212.79				
	212.69					23.861082	86.137368	212.82				
	212.66					23.861146	86.137523	212.78				
	212.14					23.860933	86.137567	212.27				
	213.01					23.860709	86.137574	213.13				
	212.20					23.860795	86.1377	212.32				
	212.28					23.860936	86.137854	212.41				
	212.68					23.86101	86.138003	212.81				
	212.30					23.860768	86.138018	212.43				
	213.77					23.860551	86.137998	213.90				
	212.77					23.860672	86.138197	212.90				
	212.35					23.860804	86.138485	212.48				
	213.32					23.860563	86.138517	213.45				
	214.33					23.860292	86.138521	214.46				
	213.96					23.860383	86.13869	214.09				
	213.87					23.860421	86.139001	214.00				
	214.18					23.860162	86.138953	214.31				
	214.56					23.859979	86.138904	214.69				
	213.94					23.86003	86.139135	214.07				
	213.88					23.860035	86.13941	214.01				
	214.17					23.85985	86.139268	214.29				
	214.64					23.859678	86.139169	214.77				
	214.25					23.859716	86.139416	214.37				
	213.92					23.859753	86.139675	214.05				
	214.21					23.859572	86.139537	214.34				
	214.77					23.859373	86.139391	214.90				
	213.96					23.859462	86.139682	214.09				
	213.59					23.859488	86.139851	213.72				
	213.87					23.859259	86.139723	214.00				
	214.29					23.859106	86.139626	214.42				
	214.84					23.858938	86.139515	214.97				
	214.23					23.858957	86.139714	214.36				
	213.50					23.858907	86.139998	213.63				
	214.31					23.858768	86.139802	214.44				
	214.82					23.85869	86.139637	214.95				
	215.15					23.858633	86.139517	215.28				
	214.73					23.858581	86.13976	214.86				
	214.22					23.858607	86.139994	214.35				
	215.05					23.858413	86.139743	215.18				
	215.38					23.858285	86.139483	215.51				
	215.03					23.858157	86.139649	215.16				
	214.77					23.857935	86.139813	214.90				
	214.52					23.857897	86.139485	214.65				
	214.27					23.857861	86.139287	214.40				
	213.99					23.857747	86.139338	214.12				
	213.99					23.857507	86.139626	214.12				
	213.08					23.857483	86.139234	213.21				

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	213.49					23.857409	86.139036	213.62				
	213.61					23.857277	86.139228	213.74				
	214.54					23.8571	86.139339	214.67				
	214.06					23.857124	86.138966	214.19				
	214.31					23.85712	86.138795	214.44				
	214.34					23.856987	86.1388	214.47				
	214.64					23.85669	86.139006	214.77				
	214.29					23.856756	86.138634	214.42				
	214.23					23.856778	86.13849	214.36				
	214.07					23.856627	86.13852	214.20				
	214.37					23.856393	86.138748	214.50				
	213.90					23.856491	86.138473	214.03				
	213.83					23.856569	86.138383	213.96				
	213.81					23.856602	86.138341	213.94				
	213.70					23.856485	86.138357	213.83				
	213.66					23.856332	86.138423	213.79				
	213.62					23.856141	86.138473	213.75				
	213.41					23.856261	86.138291	213.54				
	213.59					23.856339	86.138178	213.72				
	213.75					23.856387	86.138067	213.88				
	213.55					23.856266	86.138083	213.68				
	213.23					23.856105	86.138259	213.36				
	213.14					23.856004	86.138353	213.27				
	213.14					23.856016	86.138347	213.26				
	213.42					23.856181	86.138077	213.55				
	213.65					23.856271	86.137925	213.78				
DHN_JM_PRE_03	211.09	211.57	35408	106	**DHN_JM_POS_03**	23.849143	86.14066	211.51	211.99	35409	0.42	0.0149
	210.97					23.849164	86.14094	211.39				
	211.92					23.849121	86.141201	212.34				
	211.75					23.849012	86.141108	212.18				
	211.94					23.848815	86.141012	212.37				
	212.05					23.848814	86.141209	212.48				
	212.02					23.848723	86.14148	212.45				
	212.00					23.848624	86.141321	212.42				
	212.10					23.848521	86.141235	212.53				
	211.74					23.848489	86.141399	212.16				
	211.43					23.848485	86.141535	211.85				
	211.60					23.848468	86.14174	212.02				
	210.90					23.848362	86.1416	211.33				
	211.76					23.848262	86.141408	212.19				
	212.33					23.848182	86.141872	212.75				
	211.70					23.848057	86.141629	212.13				
	212.52					23.847928	86.14153	212.95				
	212.35					23.847867	86.141697	212.78				
	213.49					23.847688	86.142034	213.92				
	213.45					23.847543	86.141745	213.87				
	213.63					23.847435	86.141586	214.06				
	213.04					23.847337	86.141745	213.47				
	213.18					23.847256	86.142128	213.61				
	212.75					23.847182	86.141897	213.17				
	212.19					23.847048	86.141599	212.61				
	211.85					23.846942	86.141783	212.28				
	211.74					23.846777	86.141911	212.16				
	212.17					23.84662	86.142099	212.59				

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	211.05					23.846598	86.141822	211.47				
	210.43					23.846552	86.141627	210.85				
	211.29					23.846503	86.141312	211.72				
	210.57					23.84639	86.141432	210.99				
	209.82					23.846219	86.141532	210.24				
	210.02					23.84599	86.141792	210.44				
	209.41					23.846022	86.141452	209.83				
	209.88					23.846069	86.141273	210.31				
	210.35					23.846115	86.141119	210.78				
	210.92					23.846157	86.140933	211.34				
	209.90					23.84596	86.141018	210.32				
	209.64					23.845784	86.141073	210.06				
	212.35					23.845407	86.141205	212.79				
	211.04					23.845596	86.140789	211.46				
	210.13					23.845764	86.140704	210.55				
	210.21					23.845878	86.140503	210.64				
	210.82					23.845693	86.140429	211.24				
	213.27					23.845248	86.140306	213.70				
	211.80					23.845547	86.140189	212.22				

	211.40					23.845639	86.140123	211.82				
	211.29					23.845693	86.139929	211.72				
	213.26					23.845261	86.140149	213.69				
DHN_JM_PRE_04	201.22	200.4	19507	80	**DHN_JM_POS_04**	23.831267	86.150192	201.26	200.43	19510	0.03	0.0006
	200.62					23.831429	86.15013	200.66				
	200.34					23.831594	86.150052	200.18				
	200.72					23.83148	86.150212	200.77				
	201.46					23.831381	86.150355	201.50				
	200.78					23.831547	86.150327	200.82				
	200.36					23.831791	86.150301	200.40				
	200.51					23.831659	86.150431	200.55				
	201.44					23.831519	86.150574	201.48				
	200.78					23.831645	86.150588	200.82				
	200.51					23.831977	86.150577	200.55				
	200.70					23.831754	86.150665	200.74				
	200.97					23.831651	86.150757	201.01				
	200.77					23.831813	86.150817	200.81				
	200.37					23.832125	86.150899	200.41				
	200.60					23.831918	86.150977	200.65				
	200.72					23.831821	86.151061	200.76				
	200.45					23.831972	86.151144	200.50				
	199.93					23.832233	86.151267	199.97				
	200.27					23.832031	86.15131	200.31				
	200.46					23.83192	86.151372	200.50				
	199.86					23.832147	86.151585	199.90				
	199.39					23.832378	86.151823	199.43				
	199.88					23.832122	86.151797	199.92				
	200.26					23.831936	86.151793	200.30				
	200.02					23.832046	86.151967	200.06				
	199.92					23.832253	86.152415	199.96				
	199.96					23.832079	86.15223	200.00				
	200.05					23.831987	86.15218	200.09				
	200.20					23.831871	86.152108	200.24				
	200.05					23.831862	86.15236	200.09				
	200.04					23.831917	86.152557	200.08				
	200.56					23.831973	86.152819	200.60				
	199.97					23.831791	86.15267	200.01				
	199.96					23.831659	86.15252	200.00				
	199.98					23.831626	86.152592	200.02				
	199.99					23.831561	86.152733	200.03				
	199.43					23.831611	86.15304	199.47				
	199.90					23.831447	86.152963	199.94				
	200.26					23.83137	86.152871	200.30				
	200.54					23.83132	86.152803	200.58				
	200.26					23.831271	86.152978	200.31				
	200.15					23.831192	86.153092	200.19				
	200.85					23.831154	86.152855	200.89				
	200.68					23.831059	86.152997	200.72				
	200.26					23.831007	86.153168	200.30				
	201.00					23.830959	86.152966	201.04				
	201.22					23.830951	86.152904	201.26				
	201.14					23.830871	86.152983	201.18				
	200.39					23.830948	86.153158	200.44				

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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					POST MONSOON DATA							
KHUDIA RIVER					BARAKAR RIVER							
UIN OF SAND BAR	AMSL	AVG AMSL	AREA IN SQM	RIVER WIDHT IN MTR	UIN OF SAND BAR	LATITUDE (N)	LONGITUDE (E)	AMSL	AVG AMSL	AREA IN SQM	SAND THICKNESS IN MTR	VOLUME IN M CUM
DHN_KH_PRE_01	96.33	98.93	226655	118	DHN_KH_POS_01	23.701665	86.785222	96.81	99.48	226659	0.50	0.1133
	96.42					23.701762	86.785211	96.90				
	96.59					23.701908	86.785194	97.08				
	96.85					23.702089	86.785179	97.33				
	97.02					23.702205	86.78517	97.51				
	96.64					23.702069	86.785087	97.13				
	96.12					23.701859	86.784959	96.61				
	96.02					23.701709	86.784888	96.51				
	96.35					23.701633	86.78485	96.83				
	96.51					23.701777	86.784796	97.00				
	97.24					23.701974	86.784724	97.73				
	97.98					23.702171	86.784649	98.48				
	98.56					23.702011	86.784382	99.05				
	98.69					23.701907	86.784275	99.19				
	98.91					23.701566	86.78395	99.41				
	98.30					23.701747	86.783863	98.79				
	98.52					23.702062	86.783637	99.01				
	98.51					23.702226	86.783499	99.01				
	97.96					23.701994	86.783369	98.45				
	98.06					23.701603	86.783244	98.55				
	99.00					23.701496	86.783183	99.50				
	97.81					23.701807	86.783003	98.30				
	99.11					23.702252	86.782797	99.61				
	98.25					23.701895	86.782626	98.74				
	98.17					23.701593	86.782376	98.67				
	98.11					23.701598	86.782362	98.60				
	98.02					23.701956	86.782239	98.51				
	98.50					23.702388	86.782009	98.99				
	97.44					23.702328	86.781708	97.93				
	97.36					23.702006	86.781402	97.85				
	97.59					23.701896	86.781142	98.08				
	98.38					23.702283	86.781124	98.87				
	99.08					23.702677	86.781142	99.57				
	99.29					23.702518	86.780926	99.79				
	98.29					23.702302	86.780568	98.78				
	98.02					23.702213	86.780415	98.51				
	97.84					23.702543	86.780481	98.33				
	98.38					23.70296	86.780561	98.88				
	98.61					23.703235	86.780594	99.11				

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	97.38					23.703045	86.780302	97.87				
	96.19					23.702953	86.779967	96.67				
	97.25					23.70288	86.779711	97.74				
	96.65					23.70324	86.779865	97.14				
	96.67					23.703451	86.780004	97.16				
	98.50					23.703899	86.780251	99.00				
	96.87					23.703687	86.77992	97.36				
	96.76					23.703548	86.779695	97.25				
	96.92					23.703445	86.779508	97.41				
	96.65					23.7039	86.779737	97.14				
	98.15					23.704304	86.780023	98.65				
	99.64					23.704547	86.780108	100.14				
	97.19					23.704356	86.779739	97.68				
	96.14					23.704332	86.779485	96.62				
	97.85					23.704642	86.77968	98.34				
	99.90					23.704864	86.779976	100.40				
	102.71					23.705051	86.780271	103.22				
	99.34					23.70493	86.779805	99.84				
	98.46					23.704865	86.779661	98.96				
	97.50					23.704862	86.779452	97.99				
	99.09					23.705126	86.779669	99.59				
	101.01					23.705582	86.780088	101.52				
	101.14					23.706043	86.780374	101.65				
	99.30					23.706056	86.780026	99.79				
	98.75					23.706213	86.779467	99.25				
	96.79					23.706536	86.779825	97.28				
	97.42					23.70697	86.780211	97.91				
	99.02					23.707298	86.780393	99.52				
	97.56					23.707297	86.7798	98.05				
	99.29					23.707303	86.779142	99.79				
	99.06					23.707757	86.779548	99.56				
	99.11					23.708361	86.779845	99.61				
	101.07					23.70832	86.779274	101.58				
	99.89					23.708349	86.778507	100.39				
	99.02					23.708834	86.77885	99.52				
	97.65					23.709198	86.779143	98.14				
	98.94					23.709436	86.779293	99.43				
	98.81					23.709471	86.778513	99.31				
	99.04					23.709456	86.777802	99.54				
	99.15					23.709857	86.778107	99.65				
	99.35					23.71028	86.778389	99.85				
	99.79					23.710552	86.778517	100.29				
	98.09					23.710499	86.777908	98.59				
	97.96					23.710415	86.777374	98.46				
	99.17					23.710392	86.777059	99.67				
	98.16					23.71064	86.777096	98.65				
	97.24					23.710991	86.77714	97.73				

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	96.93					23.711393	86.777187	97.41				
	96.96					23.711268	86.776823	97.45				
	97.62					23.711175	86.776522	98.11				
	98.86					23.711173	86.776007	99.36				
	97.29					23.711537	86.776119	97.78				
	97.54					23.711853	86.776151	98.03				
	98.55					23.712094	86.776163	99.05				
	98.14					23.711865	86.77573	98.64				
	98.90					23.711714	86.77525	99.39				
	98.65					23.712017	86.775494	99.14				
	98.97					23.712303	86.775659	99.47				
	98.85					23.712277	86.775347	99.35				
	98.86					23.712202	86.775064	99.35				
	99.38					23.712102	86.774632	99.88				
	98.42					23.712405	86.774691	98.91				
	98.78					23.712769	86.774766	99.28				
	99.16					23.712961	86.774758	99.66				
	98.25					23.712777	86.774424	98.75				
	98.00					23.712616	86.774065	98.49				
	98.96					23.712637	86.773785	99.46				
	99.27					23.71301	86.773764	99.77				
	99.77					23.713377	86.773761	100.27				
	100.33					23.713321	86.773403	100.83				
	100.39					23.713145	86.773053	100.89				
	100.85					23.713514	86.773077	101.36				
	101.74					23.713865	86.772959	102.25				
	100.40					23.713677	86.772681	100.90				
	99.79					23.71354	86.772425	100.29				
	100.00					23.713758	86.772257	100.50				
	100.15					23.714127	86.772227	100.66				
	100.99					23.714345	86.771965	101.49				
	99.82					23.713974	86.771642	100.32				
	100.02					23.714238	86.771671	100.52				
	101.83					23.714488	86.771657	102.34				
	102.00					23.714412	86.771412	102.51				
	101.12					23.714175	86.771229	101.63				
	102.70					23.714416	86.771176	103.21				
	103.68					23.714579	86.771154	104.20				
	103.72					23.714508	86.770987	104.24				
	103.59					23.714359	86.770694	104.11				
	104.57					23.714604	86.770767	105.09				
	105.27					23.714752	86.770838	105.80				
	104.33					23.71454	86.770604	104.85				
	104.20					23.714445	86.770349	104.72				
	104.19					23.714445	86.770356	104.72				
	104.80					23.714692	86.77051	105.32				
	105.14					23.714798	86.770537	105.67				

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DHN_KH_PRE_02	103.02	102.95	60943	112	**DHN_KH_POS_02**	23.72355	86.766303	103.23	103.16	60946	0.21	0.0128
	100.89					23.72358	86.765958	101.09				
	102.11					23.723572	86.765522	102.31				
	100.85					23.723751	86.765741	101.05				
	101.71					23.723966	86.766	101.91				
	103.53					23.724141	86.766219	103.73				
	104.51					23.724295	86.766328	104.72				
	101.67					23.724237	86.765942	101.87				
	101.78					23.724203	86.765634	101.98				
	103.26					23.724187	86.765318	103.46				
	101.93					23.724373	86.765622	102.13				
	102.49					23.724707	86.765978	102.69				
	105.42					23.72505	86.766346	105.63				
	102.54					23.724956	86.765943	102.75				
	102.18					23.724918	86.765651	102.38				
	103.03					23.724929	86.765326	103.24				
	102.81					23.725305	86.765646	103.02				
	103.66					23.725585	86.765988	103.87				
	103.65					23.726007	86.76644	103.85				
	103.59					23.725932	86.765881	103.80				
	103.81					23.72588	86.76551	104.02				
	103.82					23.72585	86.765348	104.03				
	103.51					23.726115	86.765673	103.71				
	102.48					23.726315	86.766016	102.68				
	100.86					23.726592	86.766368	101.07				
	100.51					23.726856	86.766649	100.71				
	101.29					23.726851	86.766225	101.49				
	101.88					23.726893	86.76594	102.09				
	102.78					23.726916	86.765737	102.99				
	102.13					23.727213	86.766225	102.33				
	102.56					23.72743	86.766571	102.77				
	104.19					23.727659	86.76705	104.40				
	103.08					23.72773	86.766644	103.28				
	103.01					23.727635	86.766378	103.22				
	102.96					23.72758	86.766093	103.16				
	103.40					23.727964	86.766587	103.61				
	103.88					23.728027	86.766883	104.08				
	104.51					23.728192	86.767221	104.72				
	104.13					23.728219	86.76698	104.34				
	103.77					23.728263	86.76671	103.98				
	104.16					23.72835	86.766394	104.37				
	103.78					23.728429	86.766625	103.98				
	103.92					23.728484	86.766927	104.13				
	104.12					23.728592	86.767201	104.33				
	103.54					23.728724	86.766845	103.75				
	103.18					23.728993	86.766648	103.38				
DHN_KH_POS_03	106.71	103.86	87932	95	**DHN_KH_POS_03**	23.736932	86.760387	106.82	103.96	87933	0.10	0.0088

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	104.91					23.737295	86.760393	105.01				
	105.21					23.737682	86.760366	105.31				
	104.70					23.73731	86.76051	104.81				
	105.76					23.736932	86.760678	105.87				
	105.95					23.736763	86.760765	106.05				
	105.03					23.737016	86.760869	105.14				
	104.69					23.737389	86.761033	104.79				
	104.89					23.737043	86.761135	104.99				
	104.74					23.736752	86.761165	104.85				
	104.90					23.736614	86.761185	105.01				
	104.44					23.736867	86.761354	104.55				
	105.21					23.737159	86.761585	105.31				
	103.92					23.73683	86.761556	104.03				
	104.51					23.736505	86.761474	104.62				
	104.44					23.736517	86.761474	104.55				
	103.06					23.736662	86.761628	103.16				
	103.93					23.73686	86.761844	104.03				
	104.77					23.73698	86.762072	104.87				
	102.98					23.73665	86.761987	103.08				
	104.70					23.736327	86.761899	104.81				
	103.90					23.736462	86.762043	104.00				
	103.81					23.736795	86.76248	103.92				
	103.46					23.736533	86.762298	103.56				
	104.81					23.736248	86.762162	104.91				
	104.22					23.736325	86.762407	104.32				
	106.35					23.736623	86.7631	106.46				
	104.74					23.736204	86.762762	104.84				
	105.08					23.735966	86.762664	105.18				
	104.68					23.736115	86.763078	104.78				
	106.21					23.73632	86.763616	106.32				
	103.72					23.735969	86.763329	103.82				
	104.02					23.735734	86.763172	104.13				
	103.63					23.735942	86.76359	103.73				
	104.75					23.736073	86.763929	104.86				
	103.12					23.735741	86.76382	103.23				
	104.43					23.735443	86.763619	104.54				
	104.36					23.735446	86.76364	104.46				
	103.29					23.735519	86.763991	103.40				
	103.16					23.73572	86.764532	103.26				
	102.81					23.735459	86.764382	102.91				
	102.81					23.735056	86.764205	102.92				
	102.47					23.735224	86.764465	102.57				
	102.56					23.735452	86.764928	102.66				
	101.78					23.735129	86.764772	101.89				
	103.72					23.734756	86.764561	103.82				
	101.76					23.734935	86.764815	101.86				
	102.82					23.735302	86.765262	102.92				

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	102.49					23.734755	86.765299	102.60				
	103.95					23.734328	86.76519	104.06				
	102.29					23.734614	86.765657	102.40				
	104.63					23.7348	86.766147	104.73				
	101.55					23.734314	86.765972	101.65				
	103.38					23.733876	86.765781	103.49				
	102.85					23.73409	86.766209	102.95				
	106.23					23.734264	86.766735	106.34				
	104.16					23.733986	86.766484	104.27				
	104.83					23.733552	86.76616	104.94				
	103.25					23.733709	86.766849	103.36				
	103.34					23.733688	86.76728	103.45				
	101.11					23.733238	86.76719	101.21				
	103.55					23.732703	86.766915	103.65				
	101.89					23.732822	86.767229	101.99				
	101.92					23.73285	86.767646	102.02				
	101.51					23.732532	86.767393	101.61				
	103.35					23.732239	86.767231	103.45				
	102.55					23.732415	86.767749	102.65				
	103.03					23.732471	86.76785	103.14				
	102.92					23.732025	86.767622	103.02				
	103.55					23.731776	86.767489	103.66				
	104.05					23.732001	86.768065	104.16				

Atmos Sustainable Solutions P. Ltd.

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State Level Environment Impact Assessment Authority
Jharkhand, Ranchi

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

SPECIFC GRAVITY (IS:2386,Part - 3)

DHANBAD

UIN	LEASE DETAILS	AREA (Ha.)	SAMPLE NO.	GEO-COORDINATE	SPECIFIC GRAVITY	BULK DENSITY
DR1	Tasra,Damodar River	51.6	1	23°38'43.19"N86°27'44.19"E	2.629	1.300
			2	23°38'41.14"N 86°27'46.13"E	2.618	1.297
			3	23°38'39.95"N 86°27'47.61"E	2.624	1.296
			4	23°38'37.88"N 86°27'49.92"E	2.620	1.310
			5	23°38'18.64"N 86°27'59.62"E	2.630	1.299
			6	23°38'30.84"N 86°27'43.56"E	2.622	1.301
			7	23°38'36.22"N 86°27'35.93"E	2.627	1.305
DR2	Het Kandra,Damodar River	16.34	8	23°38'53.50"N 86°27'24.77"E	2.605	1.285
			9	23°38'51.80"N 86°27'30.33"E	2.600	1.303
			10	23°38'48.91"N 86°27'37.11"E	2.608	1.297
DR3	Chasnala,Damodar River	30.63	11	23°39'5.35"N 86°26'44.02"E	2.617	1.292
			12	23°39'1.67"N 86°26'53.58"E	2.626	1.296
			13	23°38'52.46"N 86°27'0.47"E	2.601	1.302
			14	23°38'56.99"N 86°26'45.89"E	2.609	1.306
DR4	Jahajtand (Bhowra), Damodar river	2.84	15	23°40'36.38"N 86°23'5.17"E	2.610	1.305
DR5	Petia,Damodar RiveR	9.95	16	23°41'12.56"N 86°23'0.98"E	2.602	1.297
			17	23°41'20.57"N 86°22'58.16"E	2.617	1.288
DR6	Dungrighat,Damodar River	36	18	23°41'39.28"N 86°22'28.16"E	2.623	1.294
			19	23°41'45.45"N 86°22'23.03"E	2.628	1.290
			20	23°41'51.08"N 86°22'18.28"E	2.631	1.302
			21	23°41'42.69"N 86°22'25.67"E	2.624	1.300
DR7	Dungri-Patia,Damodar river	24.127	22	23°42'33.86"N 86°22'25.21"E	2.600	1.297
			23	23°42'23.24"N 86°22'25.43"E	2.604	1.299
			24	23°42'16.22"N 86°22'21.30"E	2.617	1.302
			25	23°42'18.64"N 86°22'23.41"E	2.611	1.307
DR8	Dungri-Petia,Damodar River	15.18	26	23°42'44.09"N 86°22'16.96"E	2.603	1.295
			27	23°42'43.66"N 86°22'9.21"E	2.612	1.288
			28	23°42'40.16"N 86°22'19.43"E	2.605	1.285
DR9	Tetangabad,Damodar River	34.66	29	23°42'26.53"N 86°20'31.74"E	2.630	1.300
			30	23°42'22.21"N 86°20'29.56"E	2.620	1.189
			31	23°42'24.71"N 86°19'47.90"E	2.623	1.290
			32	23°42'27.55"N 86°19'41.06"E	2.627	1.297
DR10	Mahuda, Damodar River	4.52	33	23°43'6.67"N 86°17'8.31"E	2.610	1.292
DR11	Nagda,Damodar River	9.87	34	23°42'41.57"N 86°15'4.46"E	2.620	1.299
			35	23°42'38.49"N 86°14'53.21"E	2.624	1.296
DR12	Kungi,Damodar River	20	36	23°42'48.92"N 86°12'49.10"E	2.615	1.289
			37	23°42'42.26"N 86°13'5.98"E	2.621	1.293
			38	23°42'42.10"N 86°13'16.93"E	2.618	1.301
DR13	Lohpiti,Damodar River	45	39	23°43'32.97"N 86°11'4.31"E	2.632	1.298
			40	23°43'24.41"N 86°11'19.93"E	2.629	1.296
			41	23°43'18.14"N 86°11'19.89"E	2.624	1.291
			42	23°43'17.01"N 86°11'26.68"E	2.630	1.290
			43	23°43'20.36"N 86°11'23.62"E	2.628	1.300
KH14	Jajalpur,Khudia River	12	44	23°42'37.14"N 86°46'41.76"E	2.621	1.305
			45	23°42'23.43"N 86°46'47.54"E	2.622	1.303
BR15	Dumarkunda,Barakar River	25.7	46	23°42'25.80"N 86°47'49.61"E	2.611	1.298
			47	23°42'36.58"N 86°47'55.88"E	2.622	1.288
			48	23°42'42.04"N 86°47'59.04"E	2.633	1.280
			49	23°42'30.81"N 86°47'52.18"E	2.628	1.285
JM16	Hariharpur,Jamuniya River	4.13	50	23°53'16.19"N 86° 7'10.15"E	2.613	1.294
DR17	Panrua,Barakar River	2.74	51	23°55'51.37"N 86°38'54.58"E	2.617	1.298

For AD Powers Pvt. Ltd.
TESTING LAB

Authorised Signatory

AUTHORIZED SIGNATORY

State Environment Impact Assessment Authority * Jharkhand, Ranchi * Approved

A D POWER PVT.LTD. TESTING LAB

QR.NO. CD/488, SECTOR 2, DHURWA, RANCHI-834004, JHARKHAND

SPECIFC GRAVITY (IS:2386,Part - 3)

DHANBAD

UIN	LEASE DETAILS	AREA (Ha.)	SAMPLE NO.	GEO-COORDINATE	SPECIFIC GRAVITY
DR1	Tasra,Damodar River	51.6	1	23°38'43.19"N86°27'44.19"E	2.629
			2	23°38'41.14"N 86°27'46.13"E	2.618
			3	23°38'39.95"N 86°27'47.61"E	2.624
			4	23°38'37.88"N 86°27'49.92"E	2.620
			5	23°38'18.64"N 86°27'59.62"E	2.630
			6	23°38'30.84"N 86°27'43.56"E	2.622
			7	23°38'36.22"N 86°27'35.93"E	2.627
DR2	Het Kandra,Damodar River	16.34	8	23°38'53.50"N 86°27'24.77"E	2.605
			9	23°38'51.80"N 86°27'30.33"E	2.600
			10	23°38'48.91"N 86°27'37.11"E	2.608
DR3	Chasnala,Damodar River	30.63	11	23°39'5.35"N 86°26'44.02"E	2.617
			12	23°39'1.67"N 86°26'53.58"E	2.626
			13	23°38'52.46"N 86°27'0.47"E	2.601
			14	23°38'56.99"N 86°26'45.89"E	2.609
DR4	Jahajtand (Bhowra), Damodar river	2.84	15	23°40'36.38"N 86°23'5.17"E	2.610
DR5	Petia,Damodar RiveR	9.95	16	23°41'12.56"N 86°23'0.98"E	2.602
			17	23°41'20.57"N 86°22'58.16"E	2.617
DR6	Dungrighat,Damodar River	36	18	23°41'39.28"N 86°22'28.16"E	2.623
			19	23°41'45.45"N 86°22'23.03"E	2.628
			20	23°41'51.08"N 86°22'18.28"E	2.631
			21	23°41'42.69"N 86°22'25.67"E	2.624
DR7	Dungri-Patia,Damodar river	24.127	22	23°42'33.86"N 86°22'25.21"E	2.600
			23	23°42'23.24"N 86°22'25.43"E	2.604
			24	23°42'16.22"N 86°22'21.30"E	2.617
			25	23°42'18.64"N 86°22'23.41"E	2.611
DR8	Dungri-Petia,Damodar River	15.18	26	23°42'44.09"N 86°22'16.96"E	2.603
			27	23°42'43.66"N 86°22'9.21"E	2.612
			28	23°42'40.16"N 86°22'19.43"E	2.605
DR9	Tetangabad,Damodar River	34.66	29	23°42'26.53"N 86°20'31.74"E	2.630
			30	23°42'22.21"N 86°20'29.56"E	2.620
			31	23°42'24.71"N 86°19'47.90"E	2.623
			32	23°42'27.55"N 86°19'41.06"E	2.627
DR10	Mahuda, Damodar River	4.52	33	23°43'6.67"N 86°17'8.31"E	2.610
DR11	Nagda,Damodar River	9.87	34	23°42'41.57"N 86°15'4.46"E	2.620
			35	23°42'38.49"N 86°14'53.21"E	2.624
DR12	Kungi,Damodar River	20	36	23°42'48.92"N 86°12'49.10"E	2.615
			37	23°42'42.26"N 86°13'5.98"E	2.621
			38	23°42'42.10"N 86°13'16.93"E	2.618
DR13	Lohpiti,Damodar River	45	39	23°43'32.97"N 86°11'4.31"E	2.632
			40	23°43'24.41"N 86°11'19.93"E	2.629
			41	23°43'18.14"N 86°11'19.89"E	2.624
			42	23°43'17.01"N 86°11'26.68"E	2.630
			43	23°43'20.36"N 86°11'23.62"E	2.628
KH14	Jajalpur,Khudia River	12	44	23°42'37.14"N 86°46'41.76"E	2.621
			45	23°42'23.43"N 86°46'47.54"E	2.622
BR15	Dumarkunda,Barakar River	25.7	46	23°42'25.80"N 86°47'49.61"E	2.611
			47	23°42'36.58"N 86°47'55.88"E	2.622
			48	23°42'42.04"N 86°47'59.04"E	2.633
			49	23°42'30.81"N 86°47'52.18"E	2.628
JM16	Hariharpur,Jamuniya River	4.13	50	23°53'16.19"N 86° 7'10.15"E	2.613
DR17	Panrua,Barakar River	2.74	51	23°55'51.37"N 86°38'54.58"E	2.617

AUTHORIZED SIGNATORY

For AD Powers Pvt. Ltd.
TESTING LAB

Authorised Signatory

State Level Environment Impact Assessment Authority ★ Jharkhand, Ranchi ★
Approved

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: -24.1.2023

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

Description of Sample: - 07Bag Sand sample submitted to us for the Specific Gravity tests.

Source: -DAMODAR RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

UIN	LEASE DETAILS	AREA (Ha.)	SAMPLE NO.	GEO-COORDINATE	SPECIFIC GRAVITY
DR1	Tasra,Damodar River	51.6	1	23°38'43.19"N86°27'44.19"E	2.629
			2	23°38'41.14"N 86°27'46.13"E	2.618
			3	23°38'39.95"N 86°27'47.61"E	2.624
			4	23°38'37.88"N 86°27'49.92"E	2.620
			5	23°38'18.64"N 86°27'59.62"E	2.630
			6	23°38'30.84"N 86°27'43.56"E	2.622
			7	23°38'36.22"N 86°27'35.93"E	2.627

AUTHORIZED SIGNATORY
For AD Powers Pvt. Ltd.
TESTING LAB
Authorised Signatory

State Level Environment Impact Assessment Authority ★ Jharkhand, Ranchi ★
Approved

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: -24.1.2023

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

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

Source: -DAMODAR RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

UIN	LEASE DETAILS	AREA (Ha.)	SAMPLE NO.	GEO-COORDINATE	SPECIFIC GRAVITY
DR2	Het Kandra,Damodar River	16.34	1	23°38'53.50"N 86°27'24.77"E	2.605
			2	23°38'51.80"N 86°27'30.33"E	2.600
			3	23°38'48.91"N 86°27'37.11"E	2.608

AUTHORIZED SIGNATORY

For AD Powers Pvt. Ltd.
TESTING LAB

Authorised Signatory

State Level Environment Impact Assessment Authority ★ Jharkhand, Ranchi ★
Approved

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: -24.1.2023

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

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

Source: -DAMODAR RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

UIN	LEASE DETAILS	AREA (Ha.)	SAMPLE NO.	GEO-COORDINATE	SPECIFIC GRAVITY
DR3	Chasnala,Damodar River	30.63	1	23°39'5.35"N 86°26'44.02"E	2.617
			2	23°39'1.67"N 86°26'53.58"E	2.626
			3	23°38'52.46"N 86°27'0.47"E	2.601
			4	23°38'56.99"N 86°26'45.89"E	2.609

AUTHORIZED SIGNATORY

For AD Powers Pvt. Ltd.
TESTING LAB

Authorised Signatory

State Level Environment Impact Assessment Authority * Jharkhand, Ranchi * Approved

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: -24.1.2023

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

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

Source: -DAMODAR RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

UIN	LEASE DETAILS	AREA (Ha.)	SAMPLE NO.	GEO-COORDINATE	SPECIFIC GRAVITY
DR4	Jahajtand (Bhowra), Damodar river	2.84	1	23°40'36.38"N 86°23'5.17"E	2.610

AUTHORIZED SIGNATORY
For AD Powers Pvt. Ltd.
TESTING LAB
Authorised Signatory

State Level Environment Impact Assessment Authority ★ Jharkhand, Ranchi ★
Approved

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: -24.1.2023

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

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

Source: -DAMODAR RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

UIN	LEASE DETAILS	AREA (Ha.)	SAMPLE NO.	GEO-COORDINATE	SPECIFIC GRAVITY
DR5	Petia,DamodarRiveR	9.95	1	23°41'12.56"N 86°23'0.98"E	2.602
			2	23°41'20.57"N 86°22'58.16"E	2.617

AUTHORIZED SIGNATORY

For AD Powers Pvt. Ltd.
TESTING LAB

Authorised Signatory

State Environment Impact Assessment Authority
Approved
Jharkhand, Ranchi

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: -24.1.2023

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

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

Source: -DAMODAR RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

UIN	LEASE DETAILS	AREA (Ha.)	SAMPLE NO.	GEO-COORDINATE	SPECIFIC GRAVITY
DR6	Dungrighat,Damodar River	36	1	23°41'39.28"N 86°22'28.16"E	2.623
			2	23°41'45.45"N 86°22'23.03"E	2.628
			3	23°41'51.08"N 86°22'18.28"E	2.631
			4	23°41'42.69"N 86°22'25.67"E	2.624

For AD Powers Pvt. Ltd.
TESTING LAB

AUTHORIZED SIGNATORY

Authorised Signatory

State Level Environment Impact Assessment Authority * Jharkhand, Ranchi * Approved

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: -24.1.2023

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

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

Source: -DAMODAR RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

UIN	LEASE DETAILS	AREA (Ha.)	SAMPLE NO.	GEO-COORDINATE	SPECIFIC GRAVITY
DR7	Dungri-Patia,Damodar river	24.127	1	23°42'33.86"N 86°22'25.21"E	2.600
			2	23°42'23.24"N 86°22'25.43"E	2.604
			3	23°42'16.22"N 86°22'21.30"E	2.617
			4	23°42'18.64"N 86°22'23.41"E	2.611

AUTHORIZED SIGNATORY
For AD Powers Pvt. Ltd.
TESTING LAB
Authorised Signatory

State Level Environment Impact Assessment Authority * Jharkhand, Ranchi *
Approved

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NABL Accredited Laboratory

TEST REPORT

Reporting Date: -24.1.2023

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

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

Source: -DAMODAR RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

UIN	LEASE DETAILS	AREA (Ha.)	SAMPLE NO.	GEO-COORDINATE	SPECIFIC GRAVITY
DR8	Dungri-Petia,Damodar River	15.18	1	23°42'44.09"N 86°22'16.96"E	2.603
			2	23°42'43.66"N 86°22'9.21"E	2.612
			3	23°42'40.16"N 86°22'19.43"E	2.605

AUTHORIZED SIGNATORY

For AD Powers Pvt. Ltd.
TESTING LAB

Authorised Signatory

State Level Environment Impact Assessment Authority * Jharkhand, Ranchi *
Approved

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TEST REPORT

Reporting Date: -24.1.2023

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

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

Source: -DAMODAR RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

UIN	LEASE DETAILS	AREA (Ha.)	SAMPLE NO.	GEO-COORDINATE	SPECIFIC GRAVITY
DR9	Tetangabad,Damodar River	34.66	1	23°42'26.53"N 86°20'31.74"E	2.630
			2	23°42'22.21"N 86°20'29.56"E	2.620
			3	23°42'24.71"N 86°19'47.90"E	2.623
			4	23°42'27.55"N 86°19'41.06"E	2.627

AUTHORIZED SIGNATORY
For AD Powers Pvt. Ltd.
TESTING LAB
Authorised Signatory

State Level Environment Impact Assessment Authority * Jharkhand, Ranchi *
Approved

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TEST REPORT

Reporting Date: -24.1.2023

Report No.ADP/DHN/23-24/TR-NO-1/10

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

Source: -DAMODAR RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

UIN	LEASE DETAILS	AREA (Ha.)	SAMPLE NO.	GEO-COORDINATE	SPECIFIC GRAVITY
DR10	Mahuda, Damodar River	4.52	1	23°43'6.67"N 86°17'8.31"E	2.610

AUTHORIZED SIGNATORY

For AD Powers Pvt. Ltd.
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State Level Environment Impact Assessment Authority
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NABL Accredited Laboratory

TEST REPORT

Reporting Date: -24.1.2023

Report No.ADP/DHN/23-24/TR-NO-1/11

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

Source: -DAMODAR RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

UIN	LEASE DETAILS	AREA (Ha.)	SAMPLE NO.	GEO-COORDINATE	SPECIFIC GRAVITY
DR11	Nagda,Damodar River	9.87	1	23°42'41.57"N 86°15'4.46"E	2.620
			2	23°42'38.49"N 86°14'53.21"E	2.624

AUTHORIZED SIGNATORY
For AD Powers Pvt. Ltd.
TESTING LAB

Authorised Signatory

State Level Environment Impact Assessment Authority
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TEST REPORT

Reporting Date: -24.1.2023

Report No.ADP/DHN/23-24/TR-NO-1/12

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

Source: -DAMODAR RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

UIN	LEASE DETAILS	AREA (Ha.)	SAMPLE NO.	GEO-COORDINATE	SPECIFIC GRAVITY
DR12	Kungi,Damodar River	20	1	23°42'48.92"N 86°12'49.10"E	2.615
			2	23°42'42.26"N 86°13'5.98"E	2.621
			3	23°42'42.10"N 86°13'16.93"E	2.618

AUTHORIZED SIGNATORY

For AD Powers Pvt. Ltd.
TESTING LAB

Authorised Signatory

State Level Environment Impact Assessment Authority
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NABL Accredited Laboratory

TEST REPORT

Reporting Date: -24.1.2023

Report No.ADP/DHN/23-24/TR-NO-1/13

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

Source: -DAMODAR RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

UIN	LEASE DETAILS	AREA (Ha.)	SAMPLE NO.	GEO-COORDINATE	SPECIFIC GRAVITY
DR13	Lohpiti,Damodar River	45	1	23°43'32.97"N 86°11'4.31"E	2.632
			2	23°43'24.41"N 86°11'19.93"E	2.629
			3	23°43'18.14"N 86°11'19.89"E	2.624
			4	23°43'17.01"N 86°11'26.68"E	2.630
			5	23°43'20.36"N 86°11'23.62"E	2.628

AUTHORIZED SIGNATORY

For AD Powers Pvt. Ltd.
TESTING LAB

Authorised Signatory

State Level Environment Impact Assessment Authority
Approved
Jharkhand, Ranchi

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NABL Accredited Laboratory

TEST REPORT

Reporting Date: -24.1.2023

Report No.ADP/DHN/23-24/TR-NO-1/14

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

Source: -KHUDIA RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

UIN	LEASE DETAILS	AREA (Ha.)	SAMPLE NO.	GEO-COORDINATE	SPECIFIC GRAVITY
KH14	Jajalpur,Khudia River	12	1	23°42'37.14"N 86°46'41.76"E	2.621
			2	23°42'23.43"N 86°46'47.54"E	2.622

AUTHORIZED SIGNATORY

For AD Powers Pvt. Ltd.
TESTING LAB

Authorised Signatory

State Level Environment Impact Assessment Authority
Approved
Jharkhand, Ranchi

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TEST REPORT

Reporting Date: -24.1.2023

Report No.ADP/DHN/23-24/TR-NO-1/15

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

Source: -BARAKAR RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

UIN	LEASE DETAILS	AREA (Ha.)	SAMPLE NO.	GEO-COORDINATE	SPECIFIC GRAVITY
BR15	Dumarkunda,Barakar River	25.7	2	23°42'25.80"N 86°47'49.61"E	2.611
			2	23°42'36.58"N 86°47'55.88"E	2.622
			3	23°42'42.04"N 86°47'59.04"E	2.633
			4	23°42'30.81"N 86°47'52.18"E	2.628

AUTHORIZED SIGNATORY

For AD Powers Pvt. Ltd.
TESTING LAB

Authorised Signatory

State Level Environment Impact Assessment Authority * Jharkhand, Ranchi *
Approved

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TEST REPORT

Reporting Date: -24.1.2023

Report No.ADP/DHN/23-24/TR-NO-1/16

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

Source: -JAMUNIYA RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

UIN	LEASE DETAILS	AREA (Ha.)	SAMPLE NO.	GEO-COORDINATE	SPECIFIC GRAVITY
JM16	Hariharpur,Jamuniya River	4.13	1	23°53'16.19"N 86° 7'10.15"E	2.613

AUTHORIZED SIGNATORY

For AD Powers Pvt. Ltd.
TESTING LAB

Authorised Signatory

State Level Environment Impact Assessment Authority ★ Jharkhand, Ranchi ★
Approved

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TEST REPORT

Reporting Date: -24.1.2023

Report No.ADP/DHN/23-24/TR-NO-1/17

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

Source: -BARAKAR RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

UIN	LEASE DETAILS	AREA (Ha.)	SAMPLE NO.	GEO-COORDINATE	SPECIFIC GRAVITY
DR17	Panrua,Barakar River	2.74	1	23°55'51.37"N 86°38'54.58"E	2.617

AUTHORIZED SIGNATORY

For AD Powers Pvt. Ltd.
TESTING LAB

Authorised Signatory

State Level Environment Impact Assessment Authority * Jharkhand, Ranchi *
Approved

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QR.NO. CD/488, SECTOR 2, DHURWA, RANCHI-834004, JHARKHAND

SPECIFIC GRAVITY (IS:2386,PART - 3)

DIST.:-DHANBAD

SI. NO.	DETAILS	LATITUDE AND LONGITUDE	SAMPLE NO.	SPECIFIC GRAVITY
1	Mouza - Shibbabudi & Bhowra, District - Dhanbad, Jharkhand. River Damodar	23°40'28.22"N 86°23'3.92"E	1	2.630
		23°40'27.62"N 86°23'6.19"E	2	2.615
		23°40'24.97"N 86°23'5.22"E	3	2.625
		23°40'22.76"N 86°23'5.96"E	4	2.620
		23°40'22.46"N 86°23'8.67"E	5	2.634
2	Mouza - Amlabad, Fatepur & Silphor, District - Dhanbad, Jharkhand. River Damodar	23°41'12.70"N 86°23'1.97"E	6	2.633
		23°41'10.67"N 86°23'0.43"E	7	2.625
		23°41'9.16"N 86°23'1.96"E	8	2.638
		23°41'14.40"N 86°22'59.91"E	9	2.621
		23°41'15.78"N 86°23'0.91"E	10	2.634
		23°41'42.48"N 86°22'25.23"E	11	2.617
		23°41'39.85"N 86°22'25.57"E	12	2.630
		23°41'39.71"N 86°22'28.64"E	13	2.613
		23°41'37.96"N 86°22'29.58"E	14	2.603
		23°41'37.94"N 86°22'32.14"E	15	2.608
3	Mouza - Lohpiti, District - Dhanbad, Jharkhand. River Damodar	23°43'11.44"N 86°11'27.14"E	16	2.626
		23°43'15.09"N 86°11'28.28"E	17	2.608
		23°43'14.44"N 86°11'24.95"E	18	2.612
		23°43'18.22"N 86°11'26.76"E	19	2.616
		23°43'16.57"N 86°11'21.54"E	20	2.620
		23°43'17.48"N 86°11'23.82"E	21	2.623
4	Mouza - Lohpiti, District - Dhanbad, Jharkhand. River Khudia	23°42'28.18"N 86°46'45.75"E	22	2.626
		23°42'24.58"N 86°46'47.42"E	23	2.618
5	Mouza - Dumarkunda, District - Dhanbad, Jharkhand. River Barakar	23°42'21.84"N 86°47'46.00"E	24	2.625
		23°42'26.31"N 86°47'48.68"E	25	2.620

For AD Power & Pvt. Ltd.
TESTING LAB
Authorised Signatory
AUTHORIZED SIGNATORY

State Level Environment Impact Assessment Authority * Jharkhand, Ranchi *
Approved

AD Powers Private Limited

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

Reporting Date: - 2.12.2022

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

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

Source: - DAMODAR RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

SI. NO.	DETAILS	LATITUDE AND LONGITUDE	SAMPLE NO.	SPECIFIC GRAVITY
1	Mouza - Shibbabudi & Bhowra, District - Dhanbad, Jharkhand. River Damodar	23°40'28.22"N 86°23'3.92"E	1	2.630
		23°40'27.62"N 86°23'6.19"E	2	2.615
		23°40'24.97"N 86°23'5.22"E	3	2.625
		23°40'22.76"N 86°23'5.96"E	4	2.620
		23°40'22.46"N 86°23'8.67"E	5	2.634

For AD Power & Pvt. Ltd.
TESTING LAB
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AUTHORIZED SIGNATORY

State Level Environment Impact Assessment Authority
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AD Powers Private Limited

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TEST REPORT

Reporting Date: - 2.12.2022

Report No.ADP/DHN/22-23/TR-NO-12/2

Description of Sample: - 010 Bag Sand sample submitted to us for the Specific Gravity tests.

Source: - DAMODAR RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

SI. NO.	DETAILS	LATITUDE AND LONGITUDE	SAMPLE NO.	SPECIFIC GRAVITY
2	Mouza - Amlabad, Fatepur & Silphor, District - Dhanbad, Jharkhand. River Damodar	23°41'12.70"N 86°23'1.97"E	1	2.633
		23°41'10.67"N 86°23'0.43"E	2	2.625
		23°41'9.16"N 86°23'1.96"E	3	2.638
		23°41'14.40"N 86°22'59.91"E	4	2.621
		23°41'15.78"N 86°23'0.91"E	5	2.634
		23°41'42.48"N 86°22'25.23"E	6	2.617
		23°41'39.85"N 86°22'25.57"E	7	2.630
		23°41'39.71"N 86°22'28.64"E	8	2.613
		23°41'37.96"N 86°22'29.58"E	9	2.603
		23°41'37.94"N 86°22'32.14"E	10	2.608

For AD POWER PVT LTD
TESTING LAB
Authorised Signatory
AUTHORIZED SIGNATORY

State Level Environment Impact Assessment Authority ★ Jharkhand, Ranchi ★
Approved

AD Powers Private Limited

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Email.: - adpower350@gmail.com, Mobile: -7903166826
NABL Accredited Laboratory

TEST REPORT

Reporting Date: - 2.12.2022

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

Description of Sample: - 06 Bag Sand sample submitted to us for the Specific Gravity tests.

Source: - DAMODAR RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

SI. NO.	DETAILS	LATITUDE AND LONGITUDE	SAMPLE NO.	SPECIFIC GRAVITY
3	Mouza - Lohpiti, District - Dhanbad, Jharkhand. River Damodar	23°43'11.44"N 86°11'27.14"E	1	2.626
		23°43'15.09"N 86°11'28.28"E	2	2.608
		23°43'14.44"N 86°11'24.95"E	3	2.612
		23°43'18.22"N 86°11'26.76"E	4	2.616
		23°43'16.57"N 86°11'21.54"E	5	2.620
		23°43'17.48"N 86°11'23.82"E	6	2.623

For AD Power & Pvt. Ltd.
TESTING LAB
Authorised Signatory

AUTHORIZED SIGNATORY

State Level Environment Impact Assessment Authority
Approved
Jharkhand, Ranchi

AD Powers Private Limited

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TEST REPORT

Reporting Date: - 2.12.2022

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

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

Source: - KHUDIA RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

SI. NO.	DETAILS	LATITUDE AND LONGITUDE	SAMPLE NO.	SPECIFIC GRAVITY
4	Mouza - Lohpiti, District - Dhanbad, Jharkhand. River Khudia	23°42'28.18"N 86°46'45.75"E	1	2.626
		23°42'24.58"N 86°46'47.42"E	2	2.618

For AD Power[illegible] PVT. LTD.
TESTING LAB
Authorised Signatory

AUTHORIZED SIGNATORY

State Level Environment Impact Assessment Authority ★ Jharkhand, Ranchi ★
Approved

AD Powers Private Limited

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TEST REPORT

Reporting Date: - 2.12.2022

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

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

Source: - BARAKAR RIVER

SPECIFIC GRAVITY TEST

(IS:2386, Part - 3)

SI. NO.	DETAILS	LATITUDE AND LONGITUDE	SAMPLE NO.	SPECIFIC GRAVITY
5	Mouza - Dumarkunda, District - Dhanbad, Jharkhand. River Barakar	23°42'21.84"N 86°47'46.00"E	1	2.625
		23°42'26.31"N 86°47'48.68"E	2	2.620

For AD Power & Pvt. Ltd.
TESTING LAB
Authorised Signatory
AUTHORIZED SIGNATORY

State Level Environment Impact Assessment Authority ★ Jharkhand, Ranchi ★
Approved

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:- 13.10.2022

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 SEIAA Jharkhand shall be strictly adhered to.

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Approved
Jharkhand, Ranchi

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. <u>District Details: -</u>

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)*

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

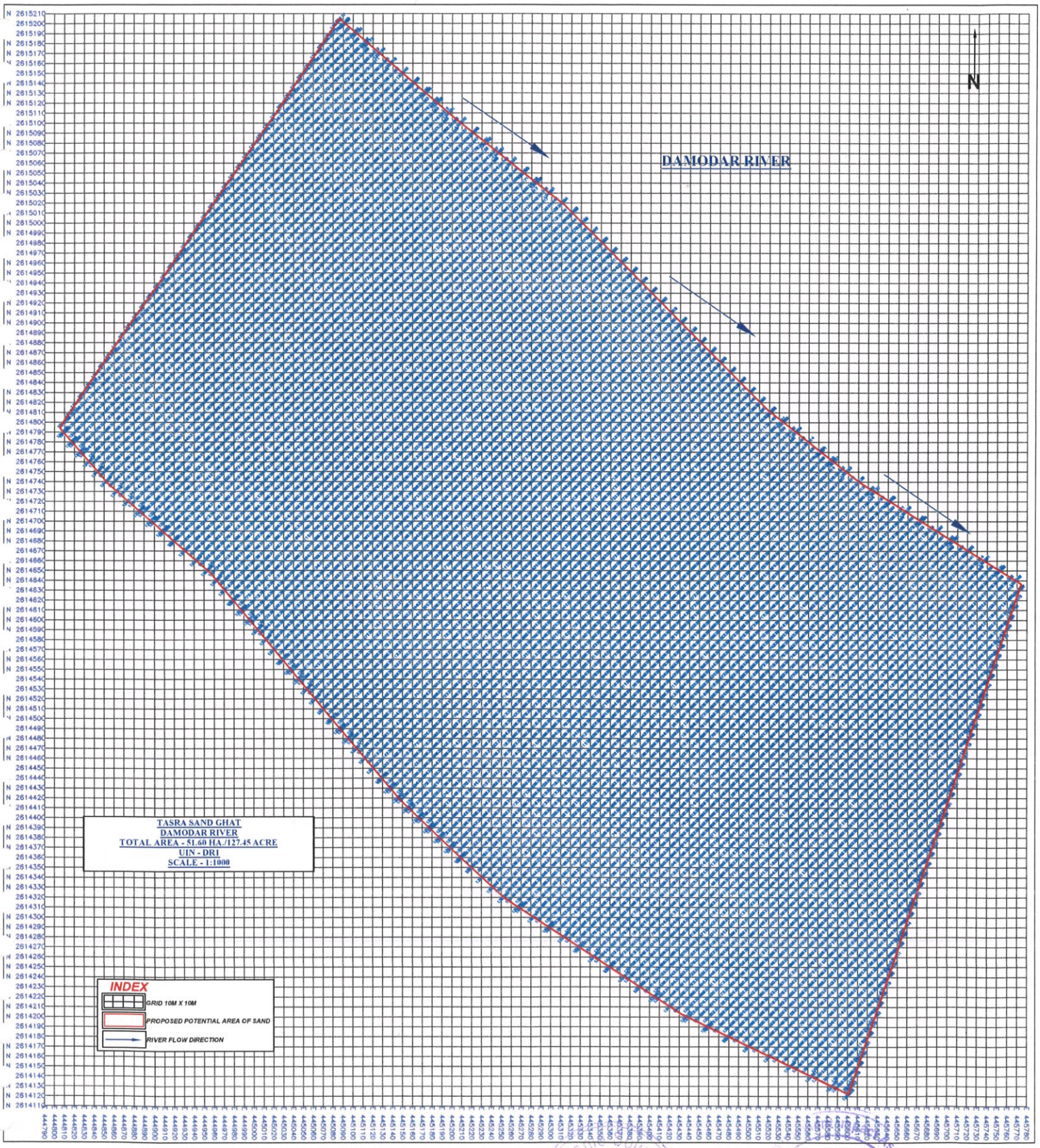
13.10.2021

(Vijay Kumar Ojha)
Director, Geology

State Level Environment Impact Assessment Authority * Jharkhand, Ranchi *
Approved

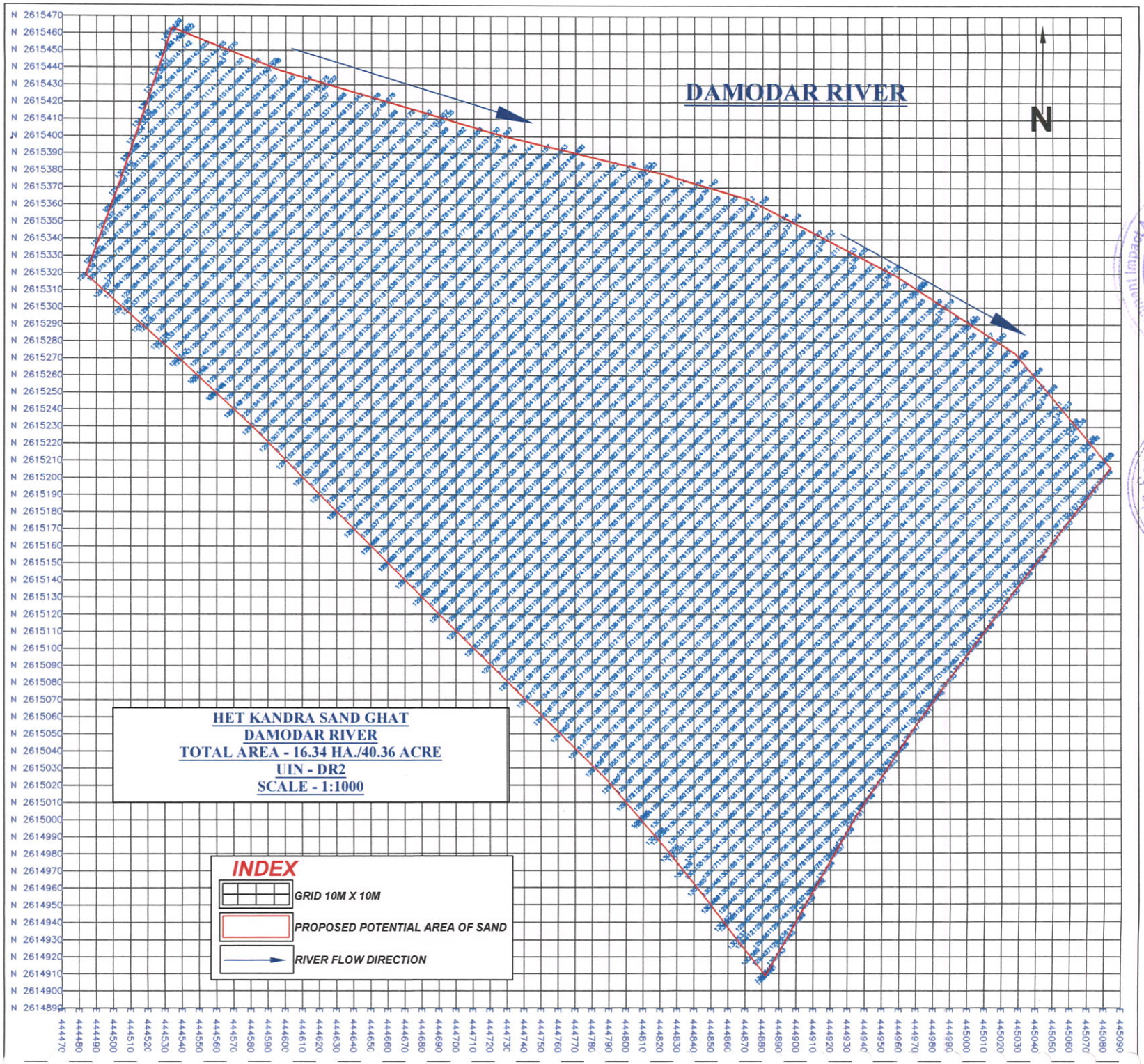
ANNEXURE-18

10M X 10M GRID MAP WITH CROSS SECTION

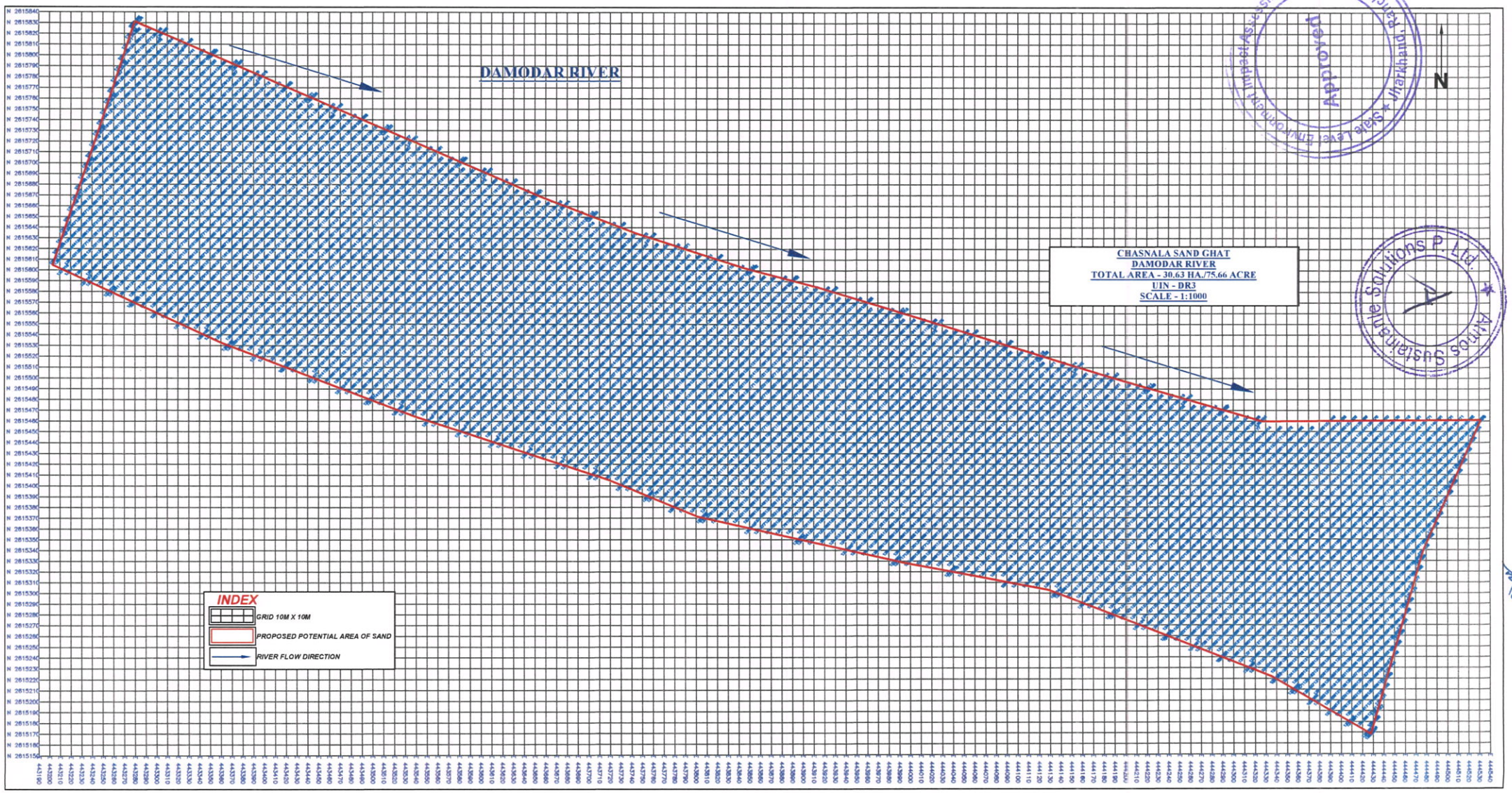


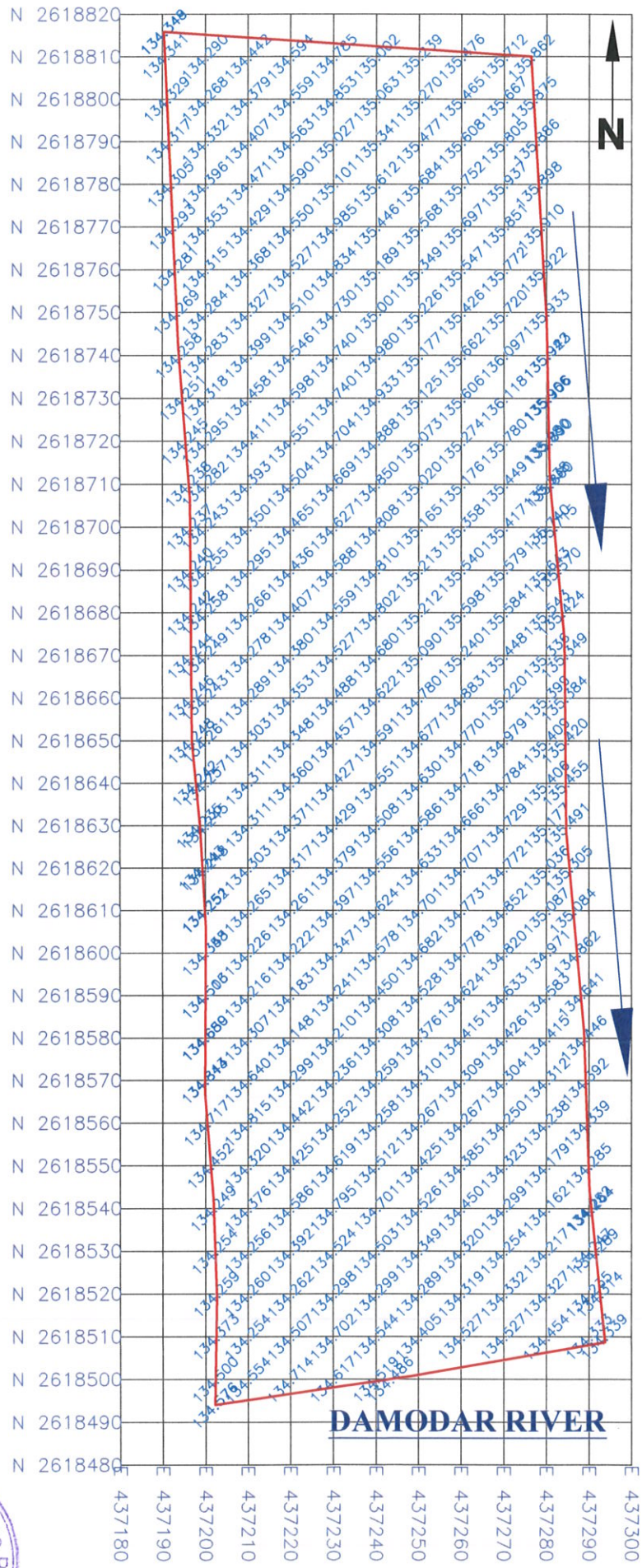
Atmos Sustainable Solutions P. Ltd.

Approved
State Level Environment Impact Assessment Authority
Jharkhand, Ranchi



Approved
State Level Environment Impact Assessment Authority ★ Jharkhand, Ranchi
Amtos Sustainable Solutions P. Ltd.


DAMODAR RIVER
CHASNALA SAND GHAT
DAMODAR RIVER
TOTAL AREA - 30.63 HA./75.66 ACRE
UIN - DR3
SCALE - 1:1000
INDEX
GRID 10M X 10M
PROPOSED POTENTIAL AREA OF SAND
RIVER FLOW DIRECTION
N
Approved
Environment Impact Assessment Authority * State Level * Jharkhand, Ranchi
Arthos Sustainable Solutions P. Ltd.



JAHAJTAND (BHOWRA) SAND GHAT
DAMODAR RIVER
TOTAL AREA - 2.84 HA./7.01 ACRE
UIN - DR4
SCALE - 1:1000

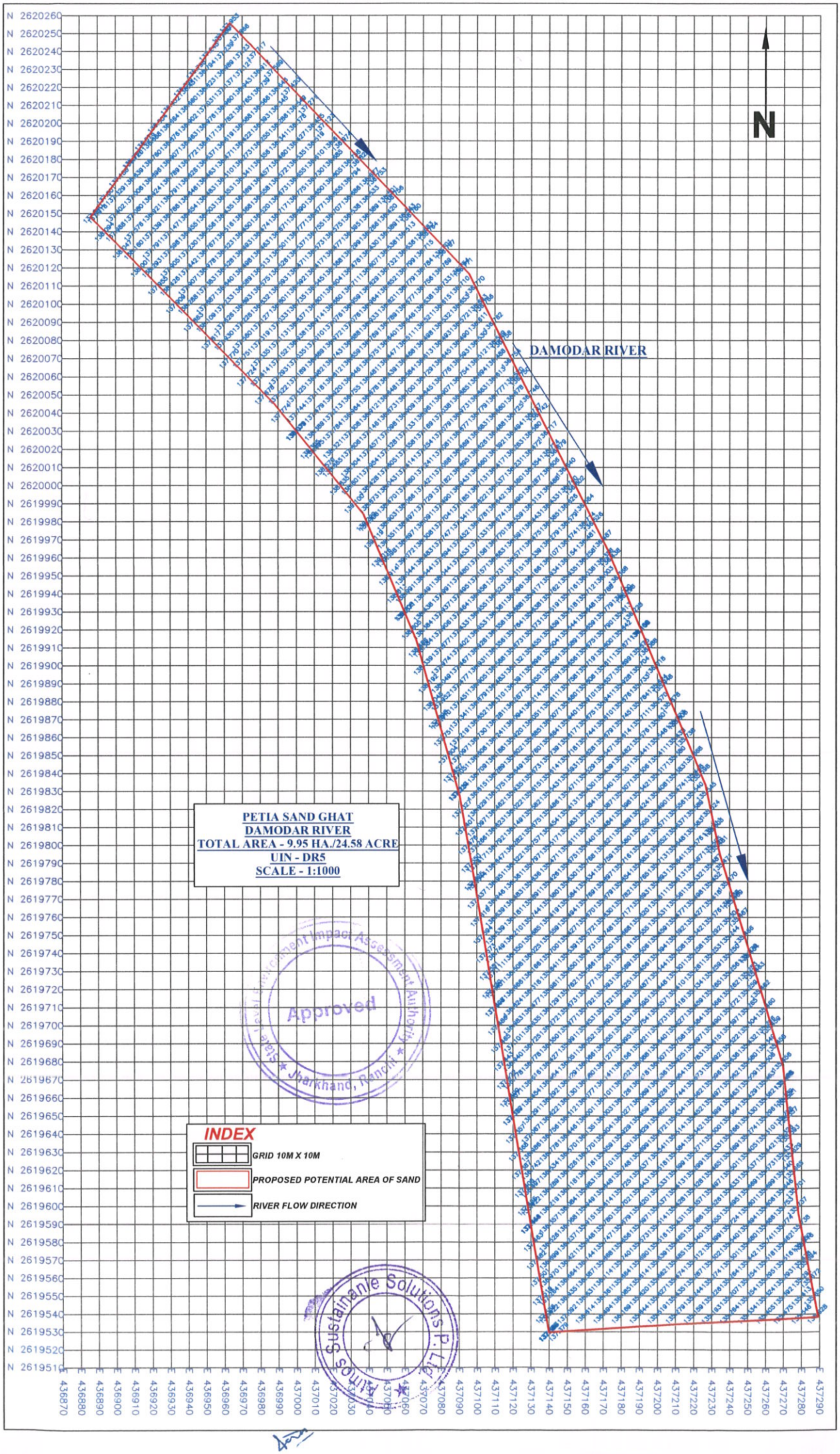
INDEX

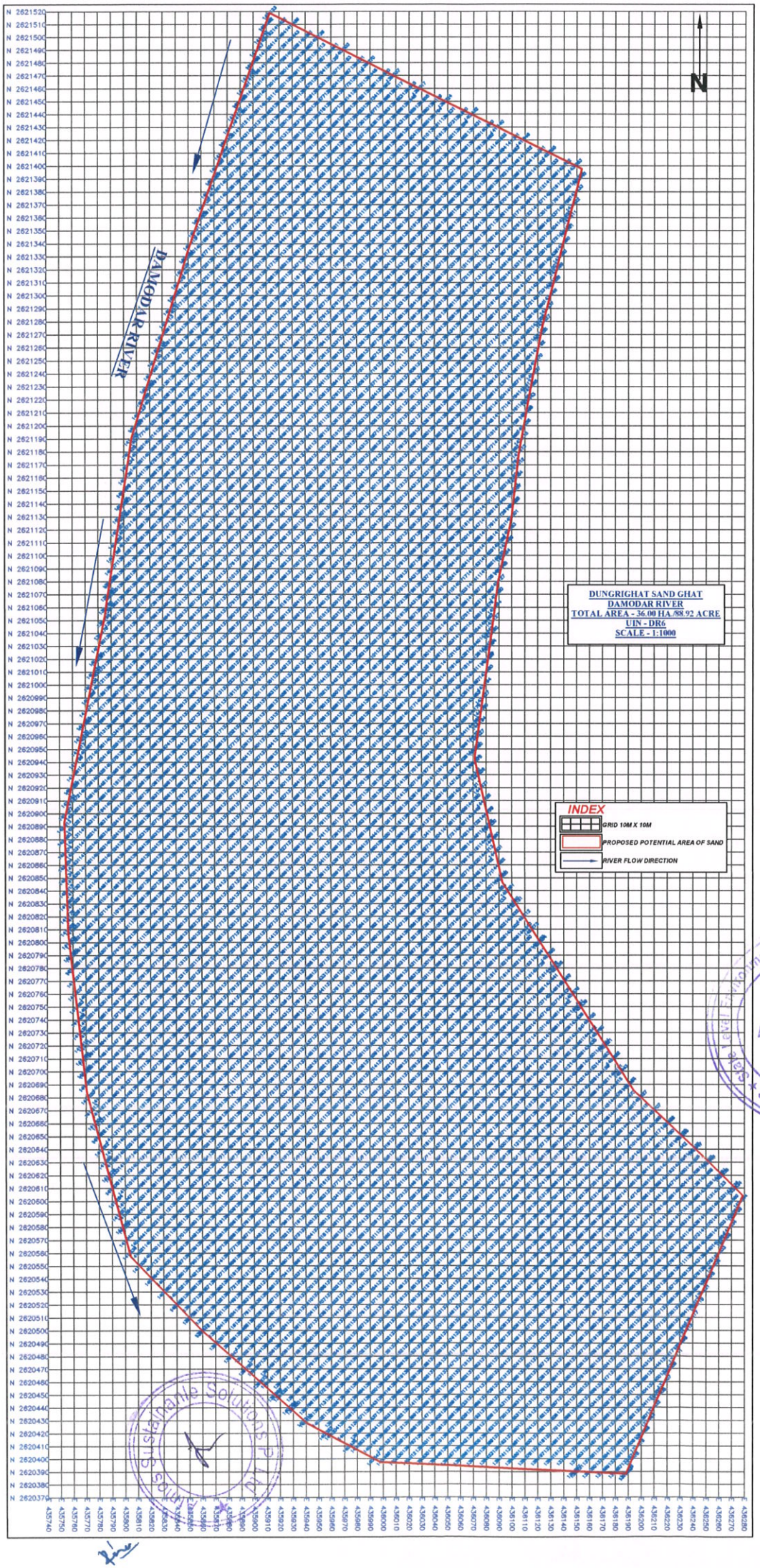
GRID 10M X 10M

PROPOSED POTENTIAL AREA OF SAND

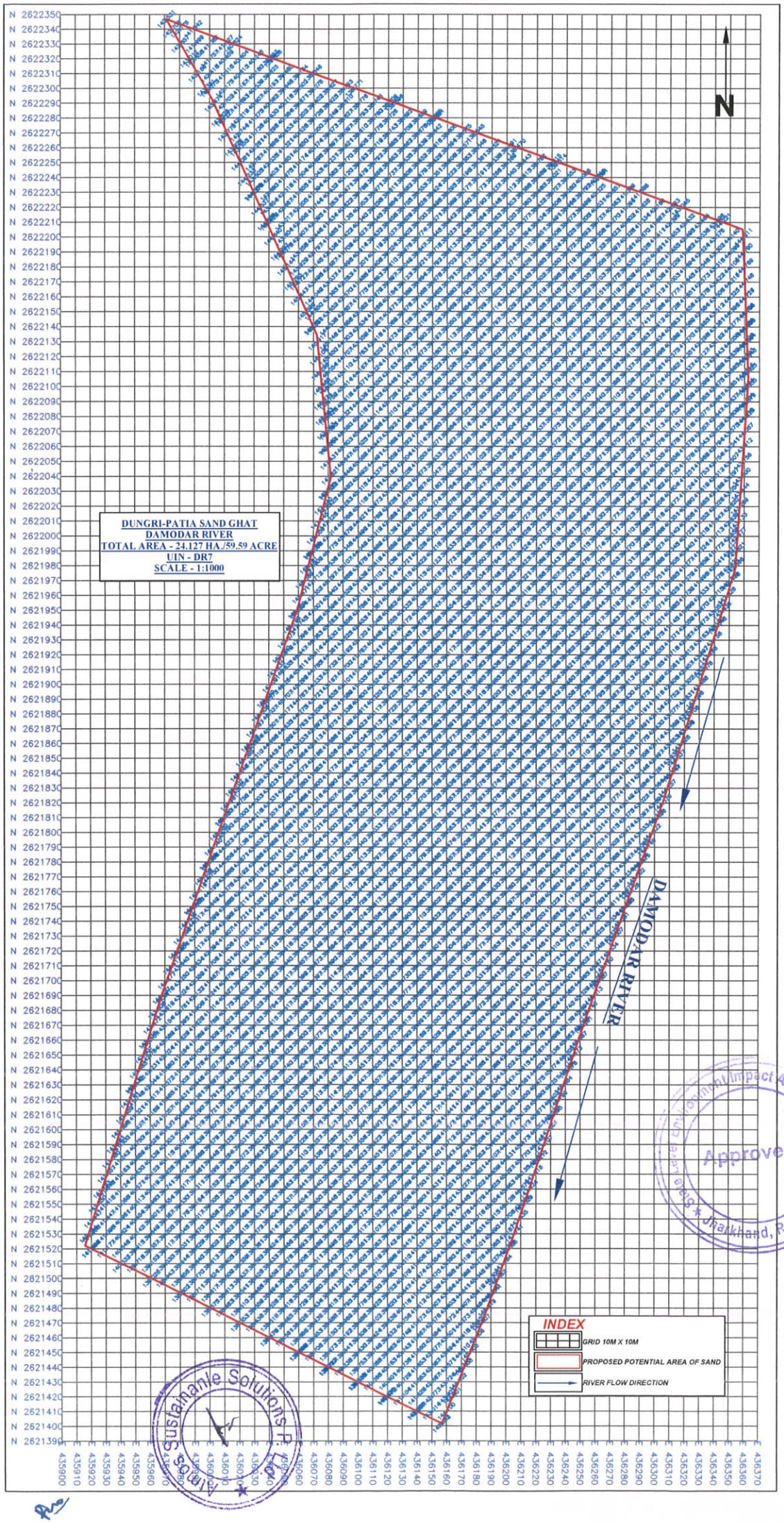
RIVER FLOW DIRECTION

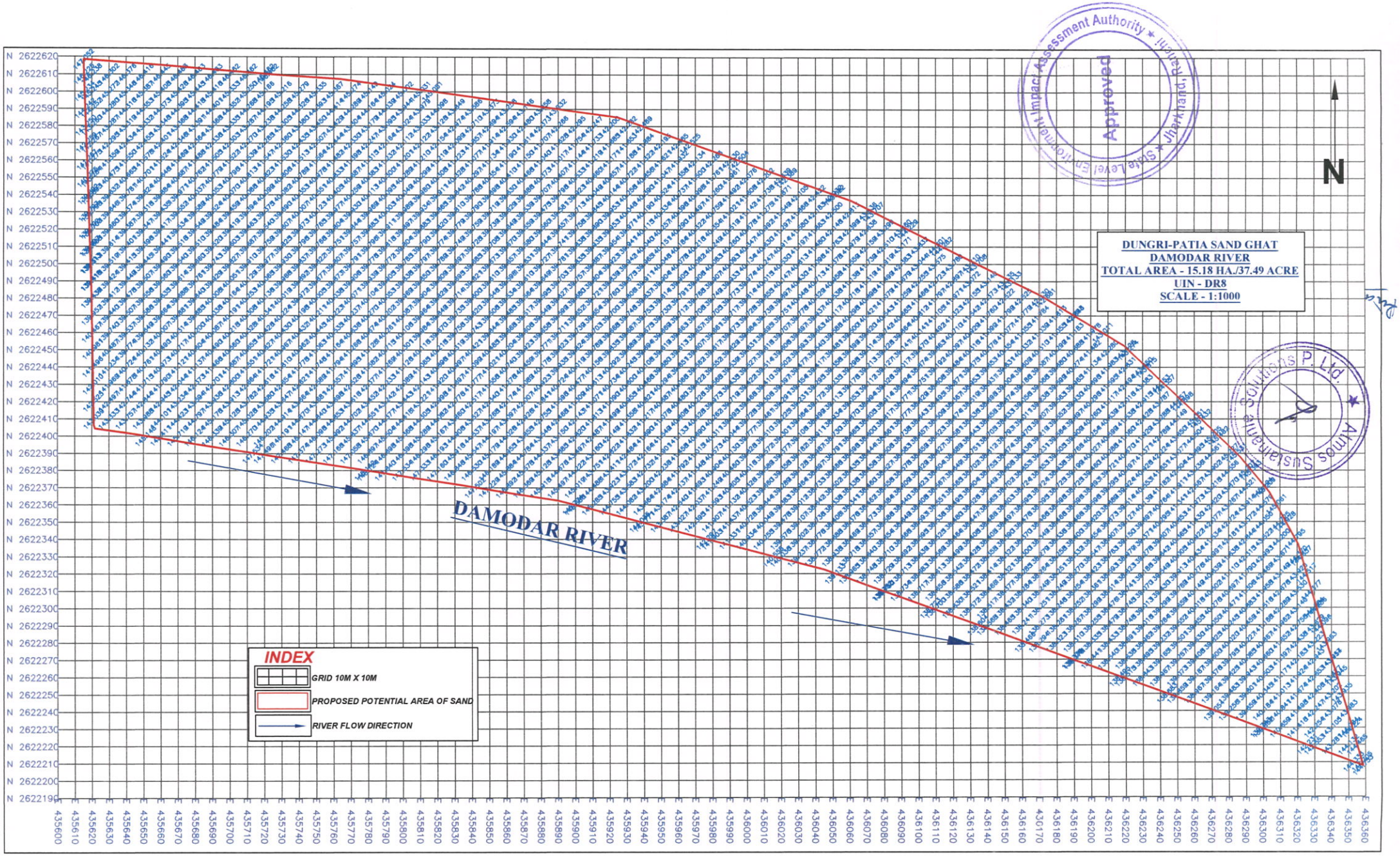
Approved
State Environment Impact Assessment Authority
Jharkhand, Ranchi

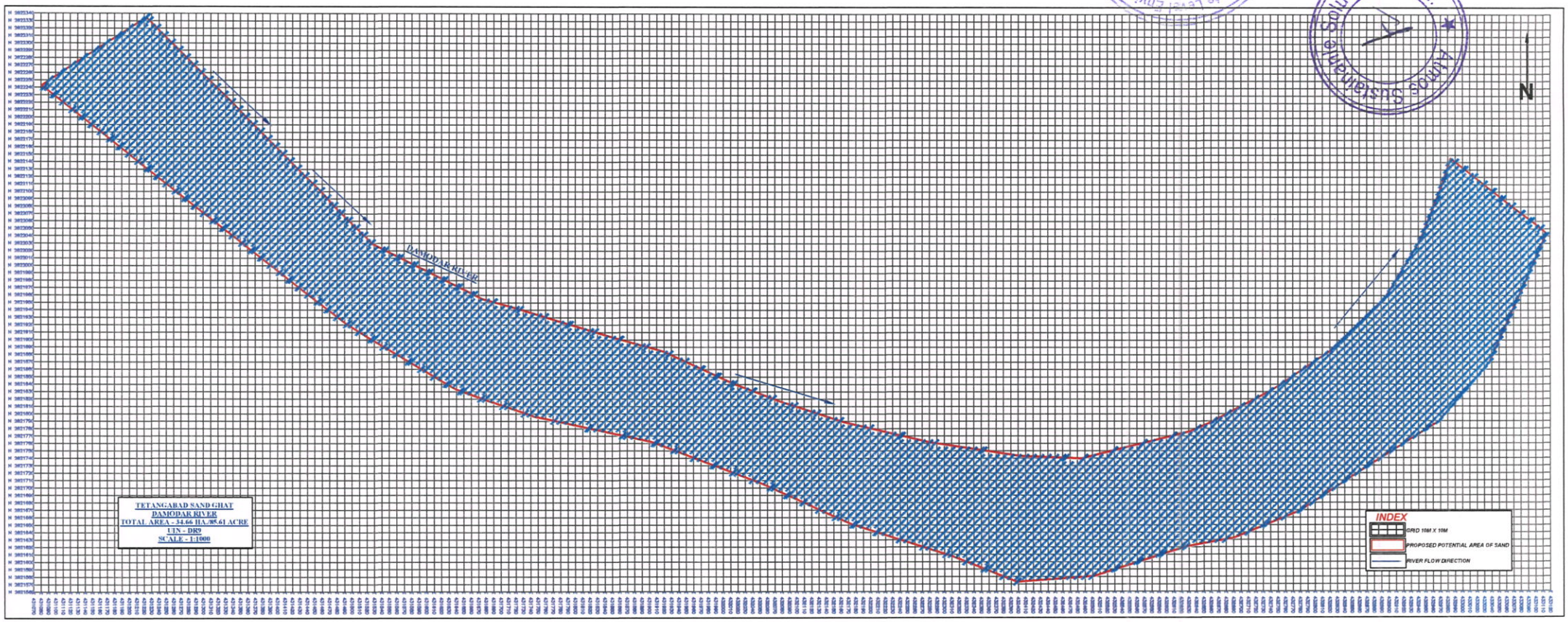

N
DAMODAR RIVER
PETIA SAND GHAT
DAMODAR RIVER
TOTAL AREA - 9.95 HA./24.58 ACRE
UIN - DR5
SCALE - 1:1000
Approved
INDEX
GRID 10M X 10M
PROPOSED POTENTIAL AREA OF SAND
RIVER FLOW DIRECTION



Environment Impact Assessment Authority
Approved
Jharkhand, Ranchi

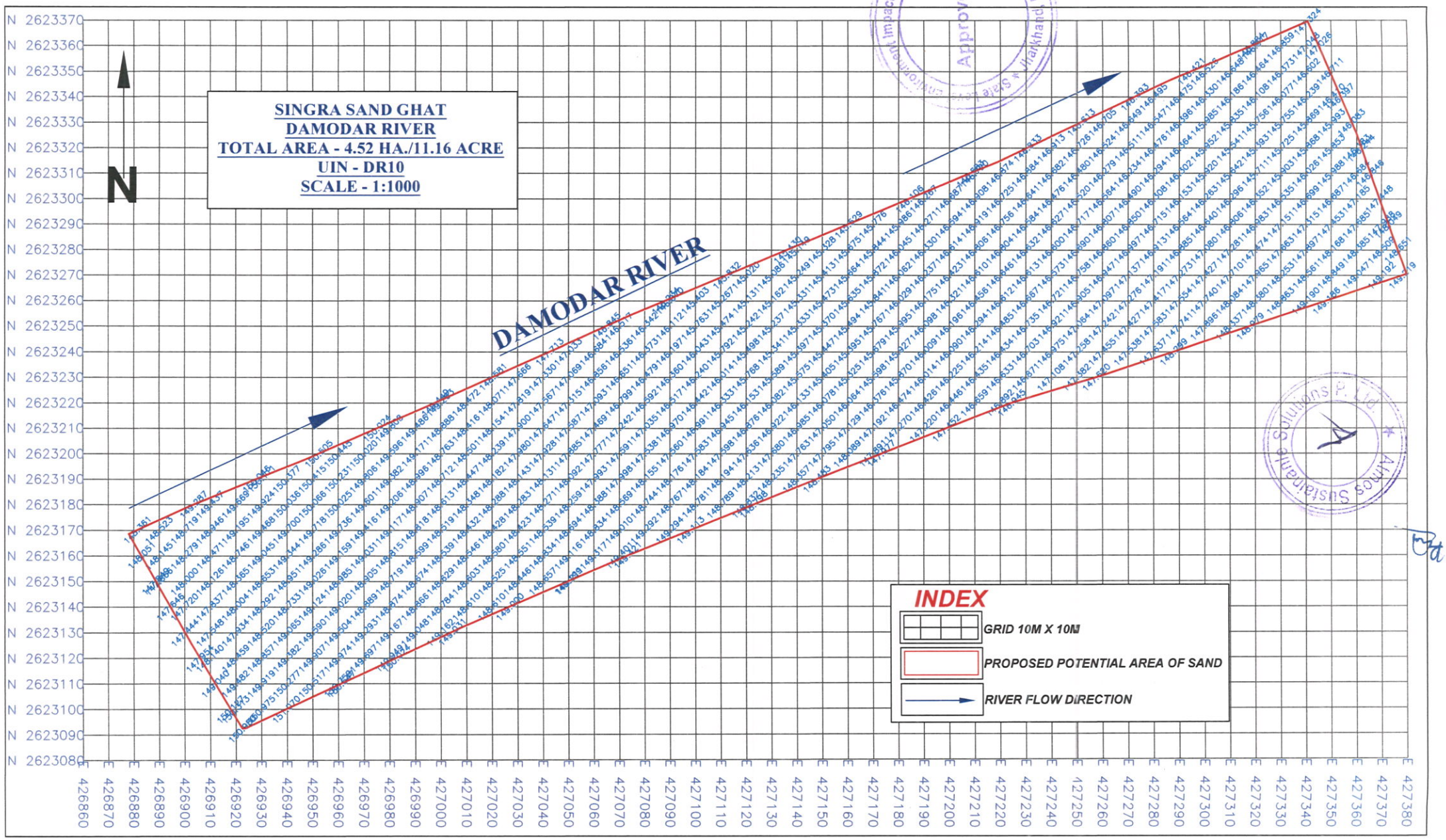

DUNGRI-PATIA SAND GHAT
DAMODAR RIVER
TOTAL AREA - 24.127 HA./59.59 ACRE
UIN - DR7
SCALE - 1:1000
N
DAMODAR RIVER
INDEX
GRID 10M X 10M
PROPOSED POTENTIAL AREA OF SAND
RIVER FLOW DIRECTION
Sustainable Solutions P. Ltd.
Approved
Environment Impact Assessment Authority
State Level
Jharkhand, Ranchi

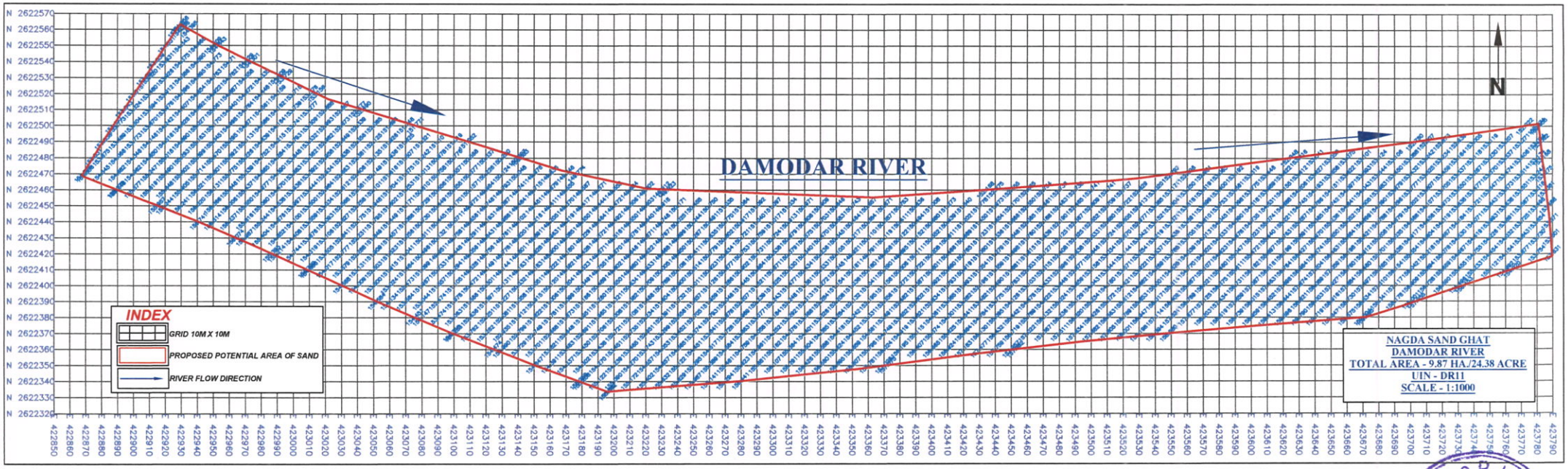

DUNGRI-PATIA SAND GHAT
DAMODAR RIVER
TOTAL AREA - 15.18 HA./37.49 ACRE
UIN - DR8
SCALE - 1:1000
N
DAMODAR RIVER
INDEX
GRID 10M X 10M
PROPOSED POTENTIAL AREA OF SAND
RIVER FLOW DIRECTION
State Level Environment Impact Assessment Authority
Approved
Jharkhand, Ranchi
Almos Sustainable Solutions P. Ltd.



State Level Environment Impact Assessment Authority ★ Jharkhand, Ranchi ★
Approved

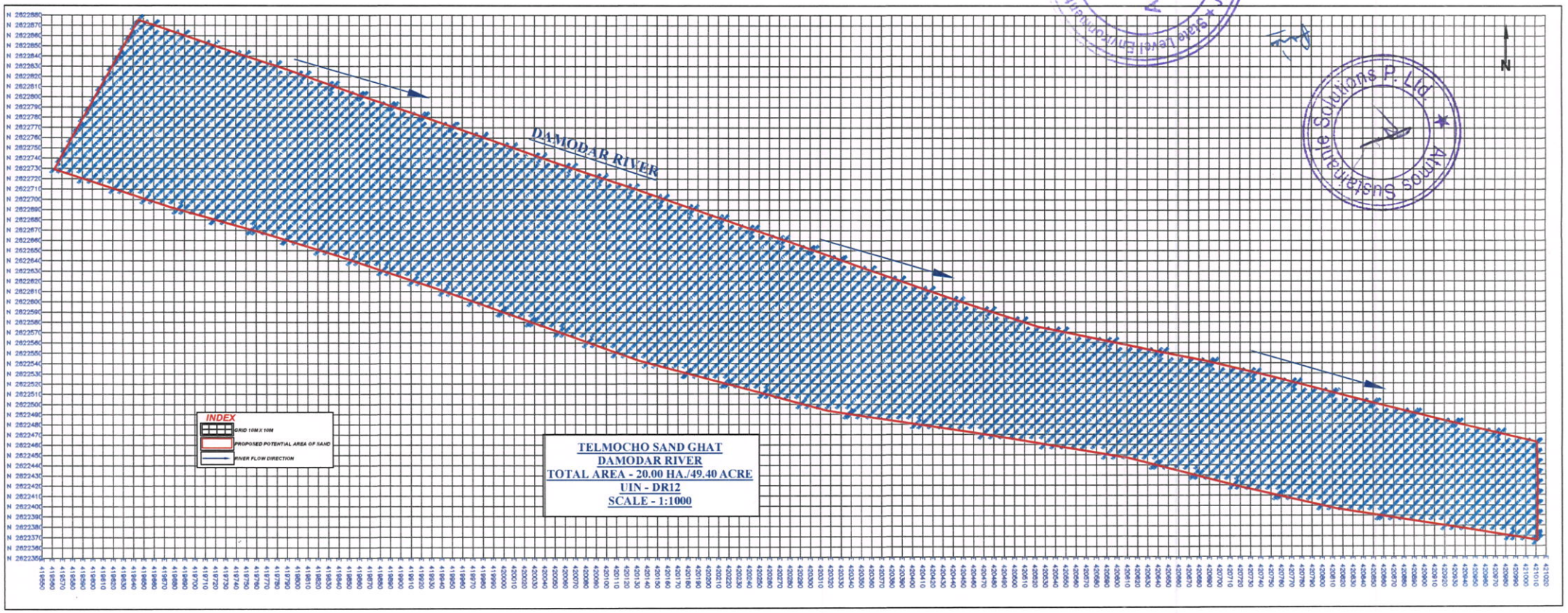
Atmos Sustainable Solutions P. Ltd.


SINGRA SAND GHAT
DAMODAR RIVER
TOTAL AREA - 4.52 HA./11.16 ACRE
UIN - DR10
SCALE - 1:1000
N
DAMODAR RIVER
INDEX
GRID 10M X 10M
PROPOSED POTENTIAL AREA OF SAND
RIVER FLOW DIRECTION
Approved
State Level Environment Impact Assessment Authority * Jharkhand, Ranchi *
Almos Sustainable Solutions P. Ltd.



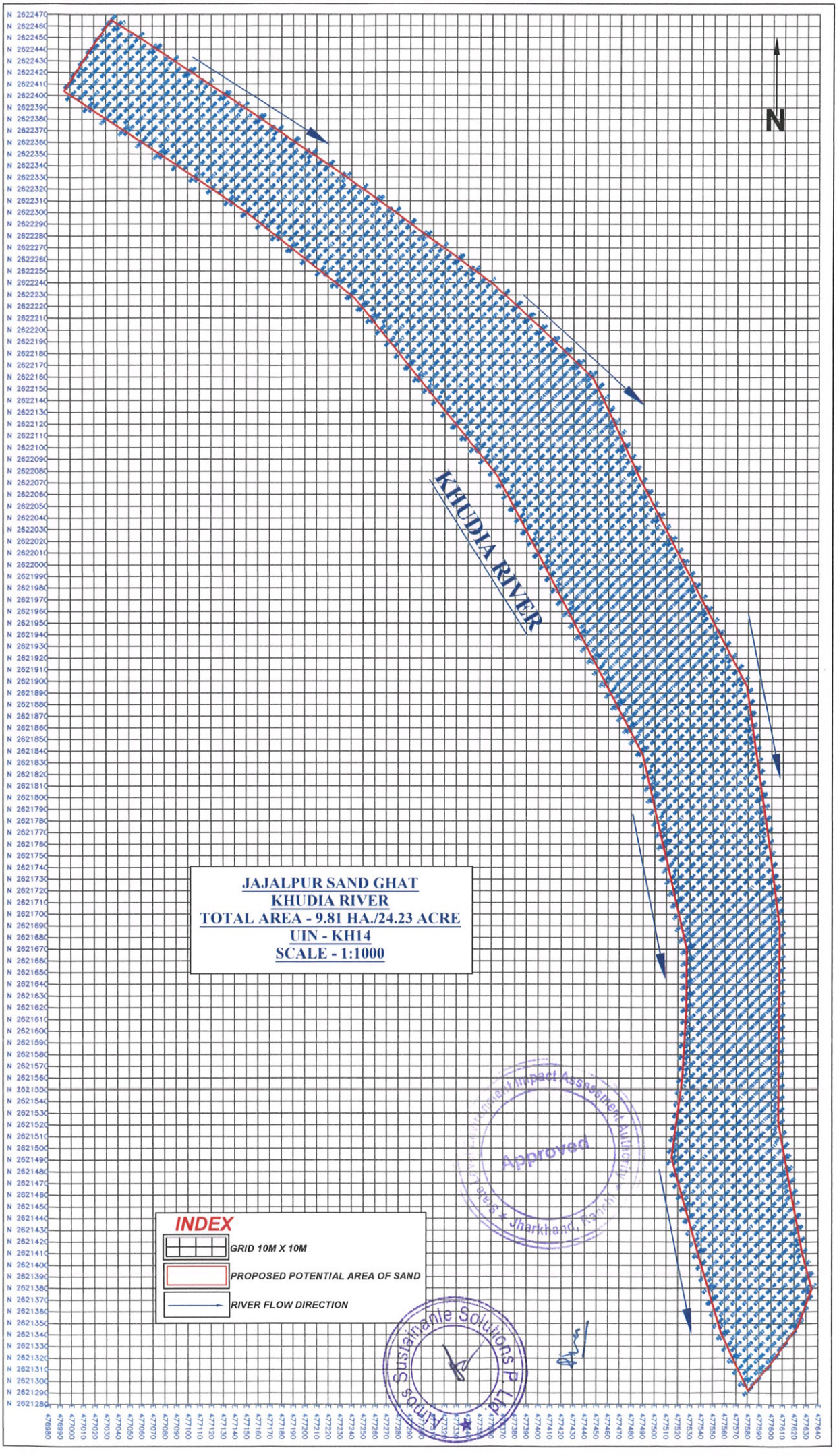
Approved
State Level Environment Impact Assessment Authority * Jharkhand, Ranchi

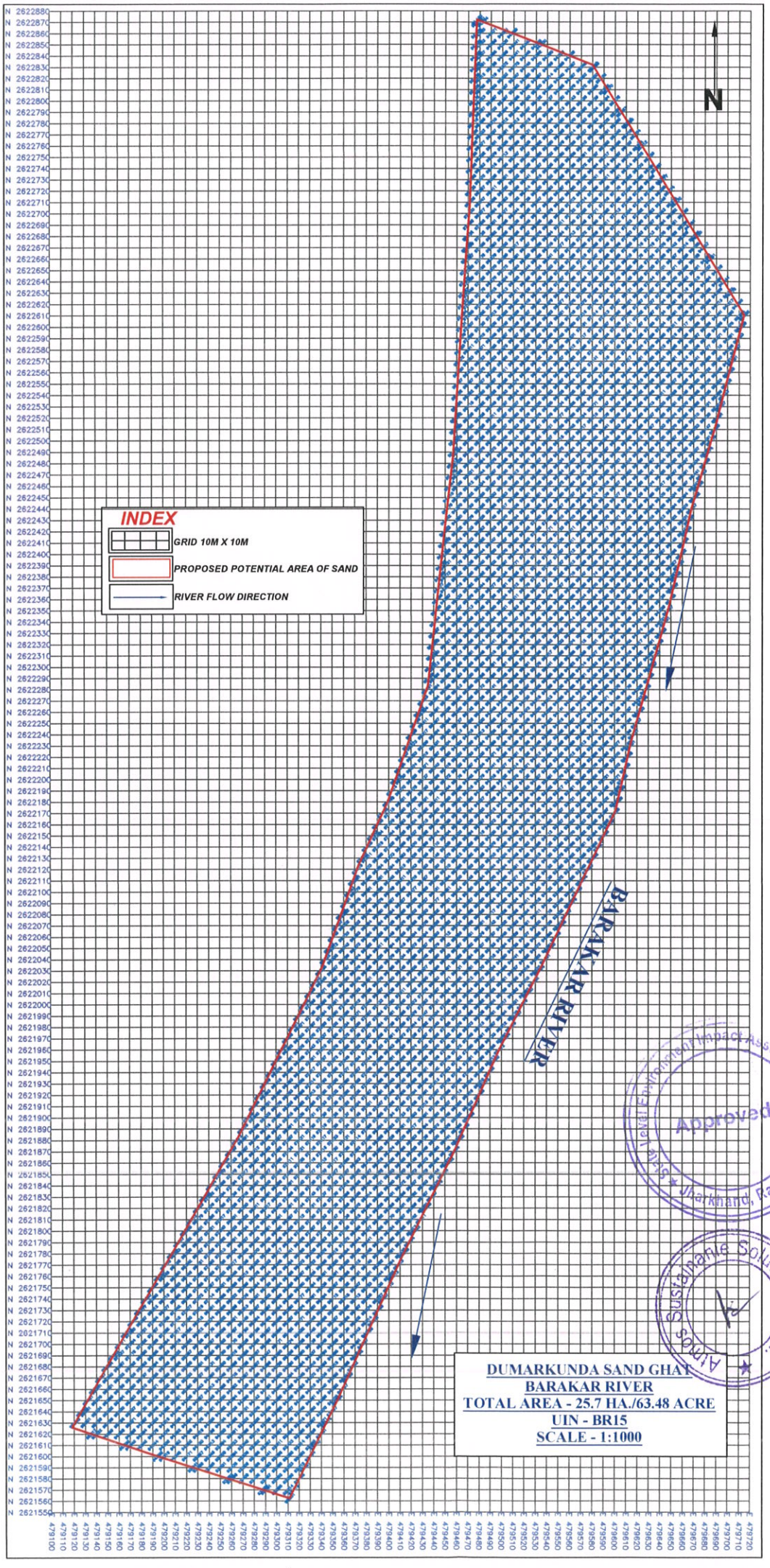
Aimos Sustainable Solutions P. Ltd.

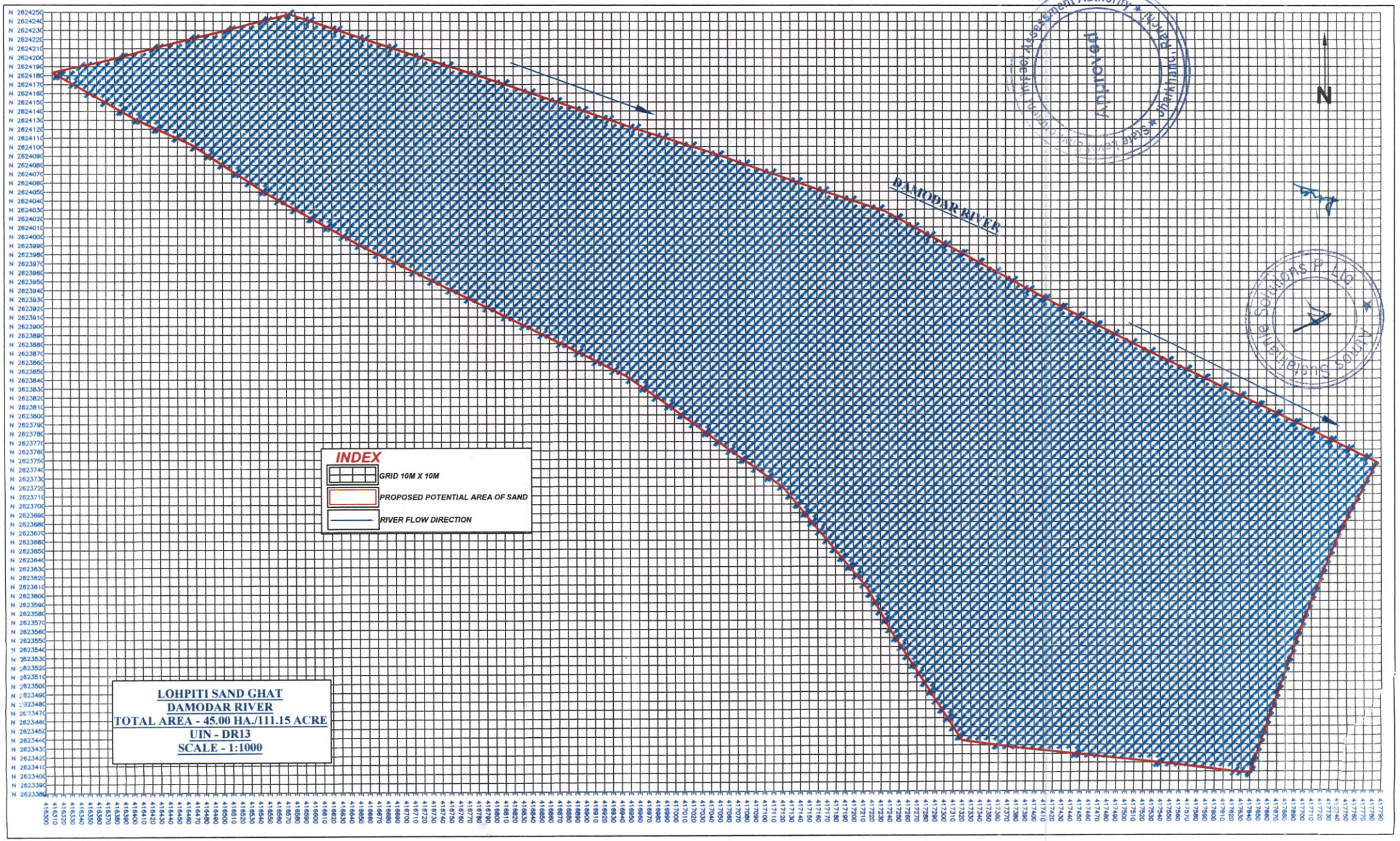


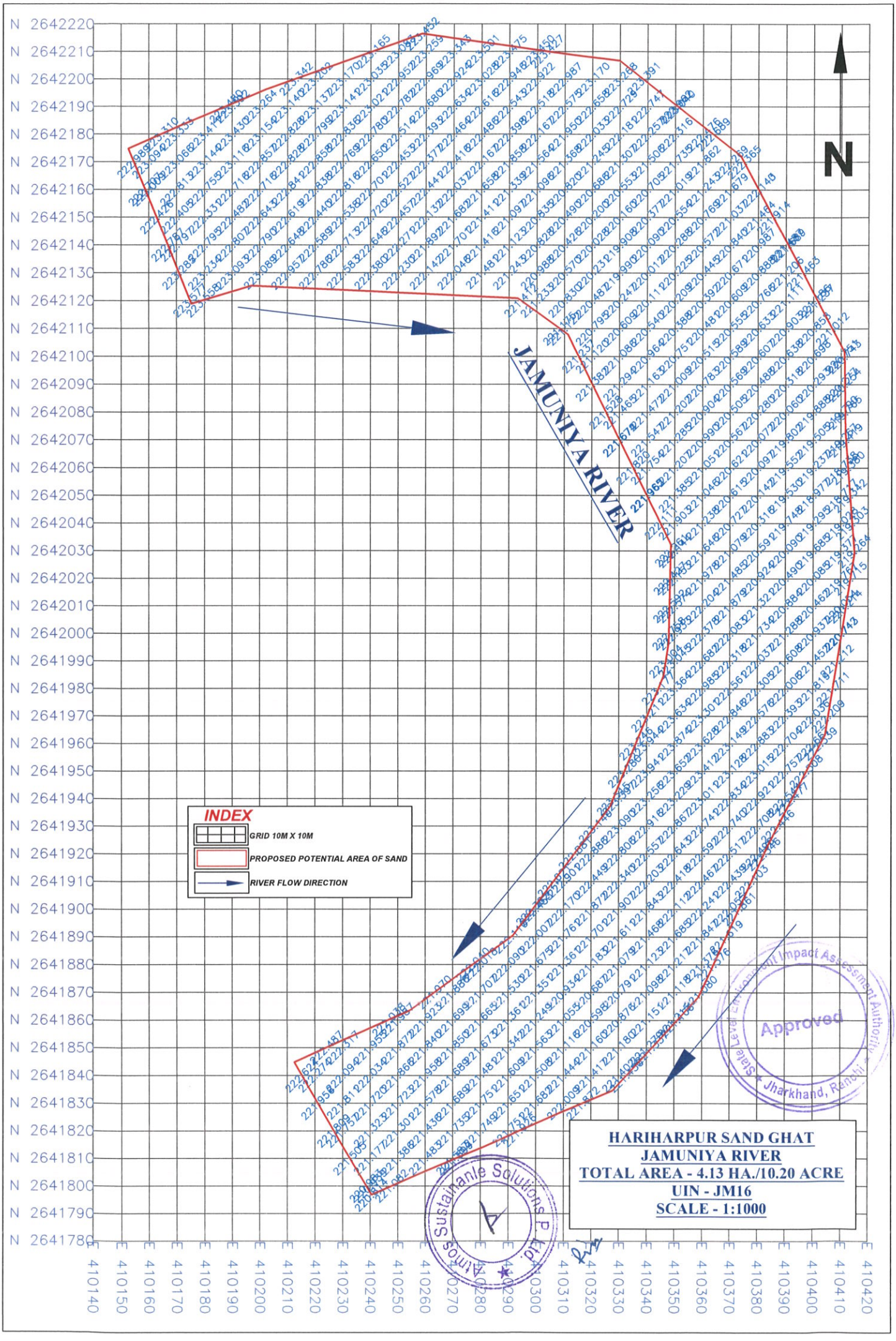
State Level Environment Impact Assessment Authority ★ Jharkhand, Ranchi ★
Approved

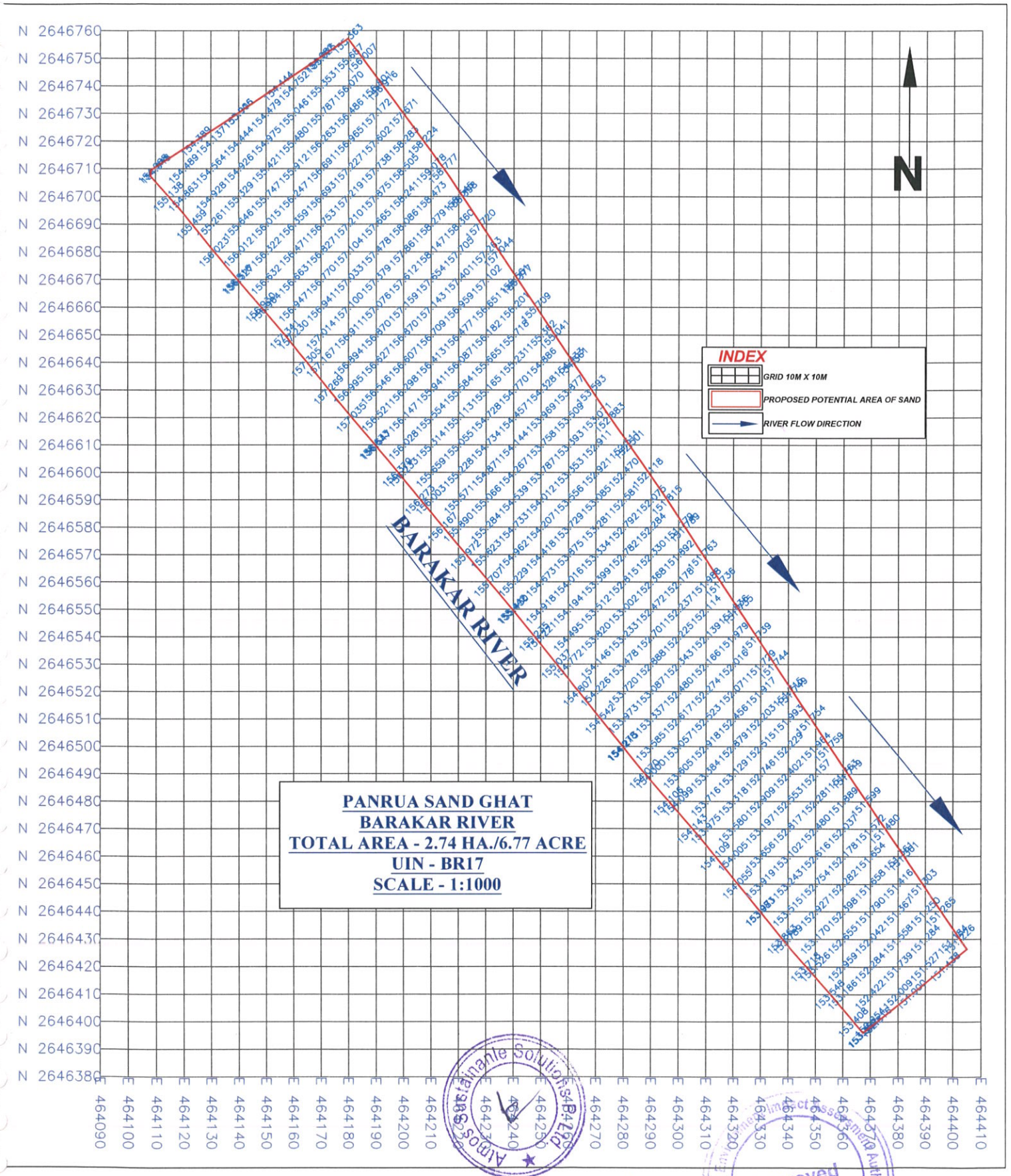
Atmos Sustainable Solutions P. Ltd.


N
KHUDIA RIVER
JAJALPUR SAND GHAT
KHUDIA RIVER
TOTAL AREA - 9.81 HA./24.23 ACRE
UIN - KH14
SCALE - 1:1000
INDEX
GRID 10M X 10M
PROPOSED POTENTIAL AREA OF SAND
RIVER FLOW DIRECTION
Approved
Sustainable Solutions Pvt. Ltd.


INDEX
GRID 10M X 10M
PROPOSED POTENTIAL AREA OF SAND
RIVER FLOW DIRECTION
N
BARAKAR RIVER
DUMARKUNDA SAND GHAT
BARAKAR RIVER
TOTAL AREA - 25.7 HA./63.48 ACRE
UIN - BR15
SCALE - 1:1000
Approved
State Level Environment Impact Assessment Authority
Jharkhand, Ranchi
Atmos Sustainable Solutions P. Ltd.


DAMODAR RIVER
N
INDEX
GRID 10M X 10M
PROPOSED POTENTIAL AREA OF SAND
RIVER FLOW DIRECTION
LOHPITI SAND GHAT
DAMODAR RIVER
TOTAL AREA - 45.00 HA./111.15 ACRE
UIN - DR13
SCALE - 1:1000


N
JAMUNIYA RIVER
INDEX
GRID 10M X 10M
PROPOSED POTENTIAL AREA OF SAND
RIVER FLOW DIRECTION
HARIHARPUR SAND GHAT
JAMUNIYA RIVER
TOTAL AREA - 4.13 HA./10.20 ACRE
UIN - JM16
SCALE - 1:1000
Approved
Jharkhand, Ranchi
Atmos Sustainable Solutions P. Ltd.


INDEX
GRID 10M X 10M
PROPOSED POTENTIAL AREA OF SAND
RIVER FLOW DIRECTION
N
BARAKAR RIVER
PANRUA SAND GHAT
BARAKAR RIVER
TOTAL AREA - 2.74 HA./6.77 ACRE
UIN - BR17
SCALE - 1:1000
Approved
Jharkhand, Ranchi

ANNEXURE-19

COPY OF ACCREDATED 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.

Approved

State Level Environment Impact Assessment Authority * Jharkhand, Ranchi *

Sr. Director, NABET	*Certificate No.*	*Valid till*
Dated: January 6, 2021	**NABET/EIA/2023/IA0063**	**September 8, 2023**

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

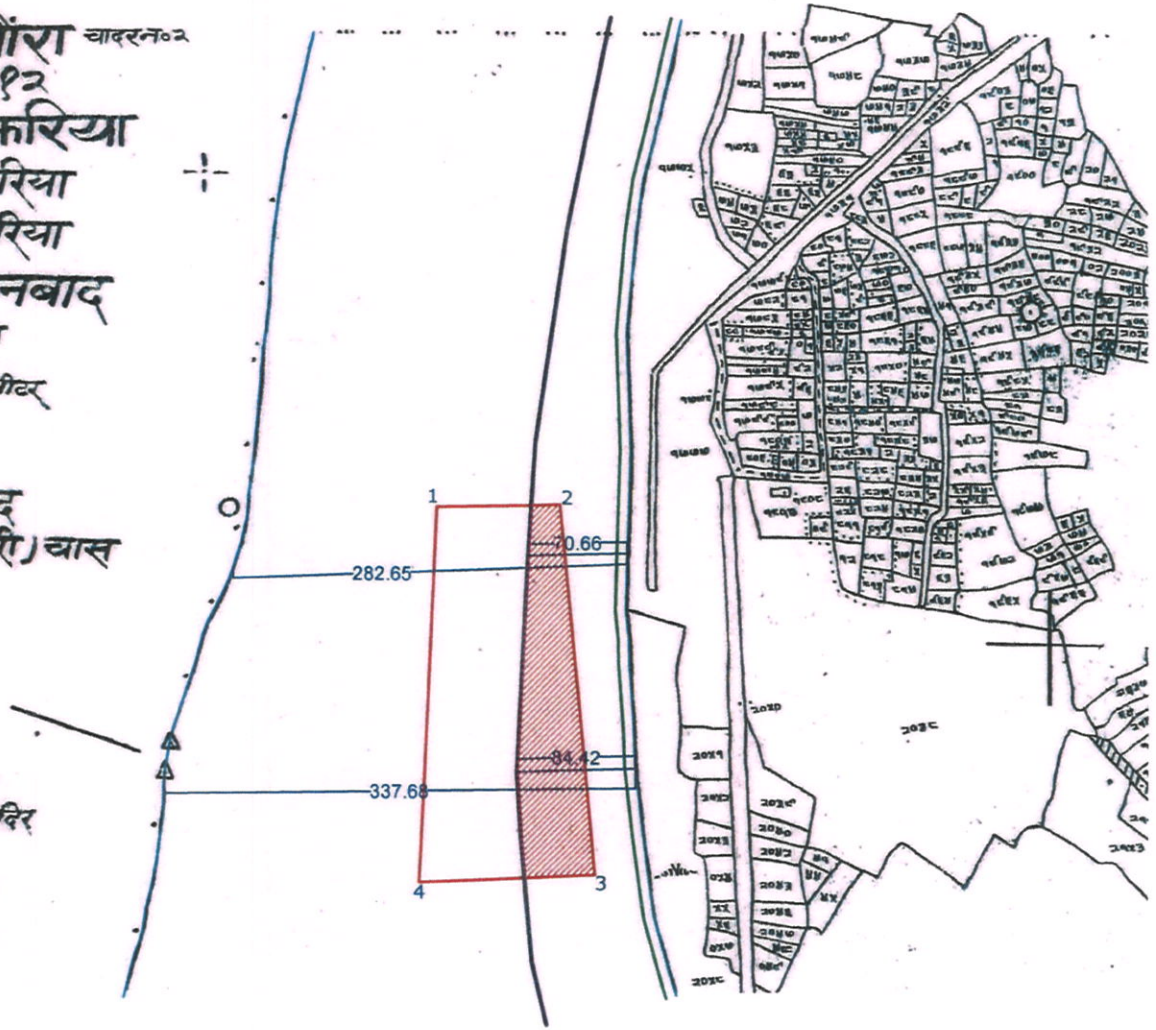
ANNEXURE-20

State Level Environment Impact Assessment Authority
Approved
Jharkhand, Ranchi

नाम ग्राम भौंरा चादरन०२
थाना नम्बर ११२
राजस्व थाना झरिया
अंचल झरिया
पुलिस थाना झरिया
जिला धनबाद

पैमाना १६" = १ मील
या
१ सेन्टी मीटर = ३८·६० मीटर
सन् २००१ - २००२

आमलाबाद
थाना (चन्दन कियारी) चास



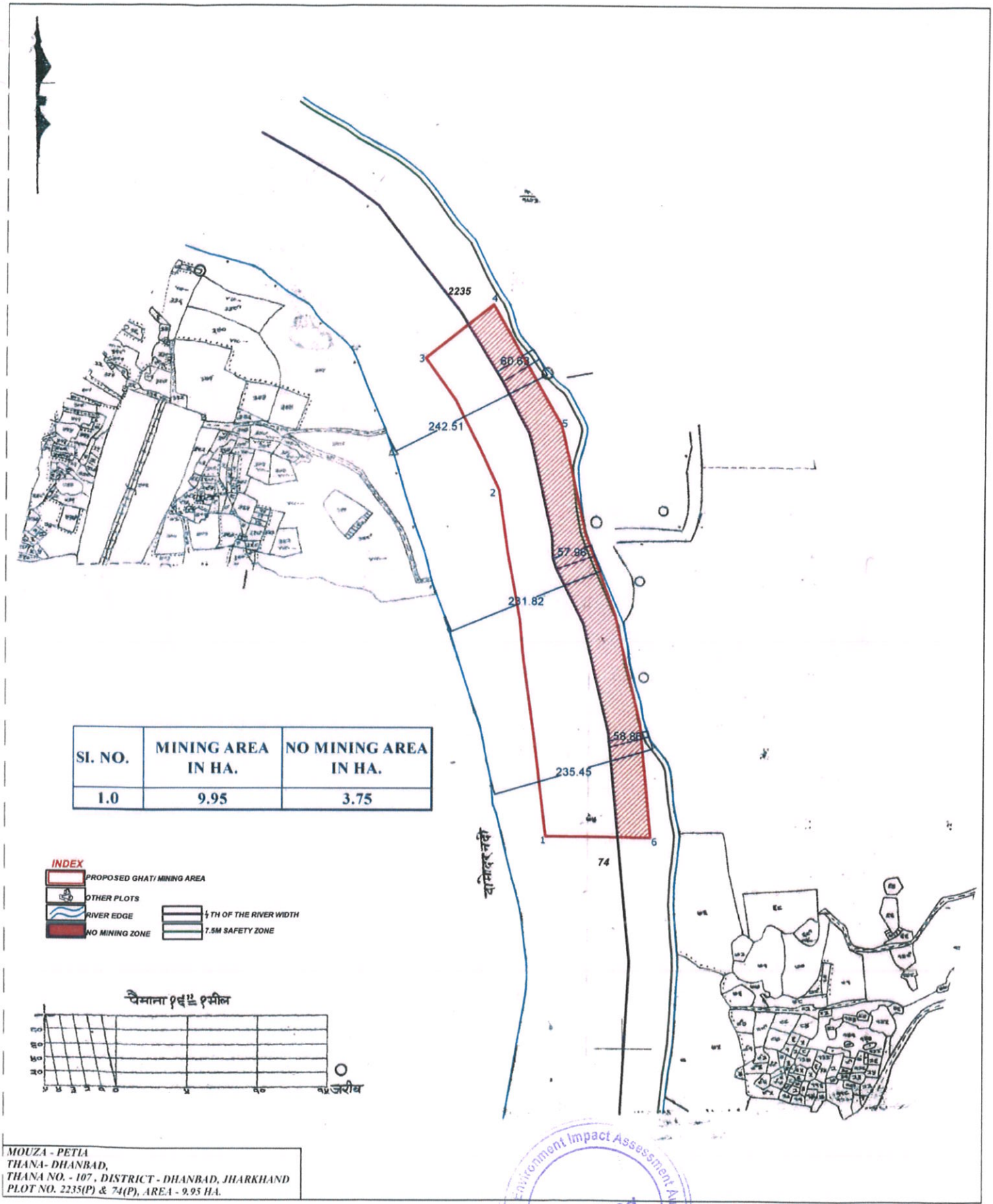
खेसरा नम्बर	अवस्थित स्थान
१४५४	बजरंगबली मंदिर
१४७८	शिव मंदिर
१४८५	स्कूल
१४८७	काली मंदिर
१४८८	शिव मंदिर
१४८९	काली मंदिर
१४९०	हरि मंदिर

Approved
State Level Environment Impact Assessment Authority
Jharkhand, Ranchi

INDEX
- PROPOSED GHAT/ MINING AREA
- OTHER PLOTS
- RIVER EDGE
- NO MINING ZONE
- ½ TH OF THE RIVER WIDTH
- 7.5M SAFETY ZONE

SI. NO.	MINING AREA IN HA.	NO MINING AREA IN HA.
1.0	2.84	1.03

MOUZA - JAHAJTAND (BHOWRA)
THANA - JHARIYA,
THANA NO. - 112, DISTRICT - DHANBAD, JHARKHAND
PLOT NO. 2752 (P), KHATA NO. - 186, AREA - 2.84 HA.



SI. NO.	MINING AREA IN HA.	NO MINING AREA IN HA.
1.0	9.95	3.75

INDEX

PROPOSED GHAT/ MINING AREA

OTHER PLOTS

RIVER EDGE

NO MINING ZONE

¼ TH OF THE RIVER WIDTH

7.5M SAFETY ZONE

पैमाना १इंच = १मील

MOUZA - PETIA
THANA- DHANBAD,
THANA NO. - 107 , DISTRICT - DHANBAD, JHARKHAND
PLOT NO. 2235(P) & 74(P), AREA - 9.95 HA.

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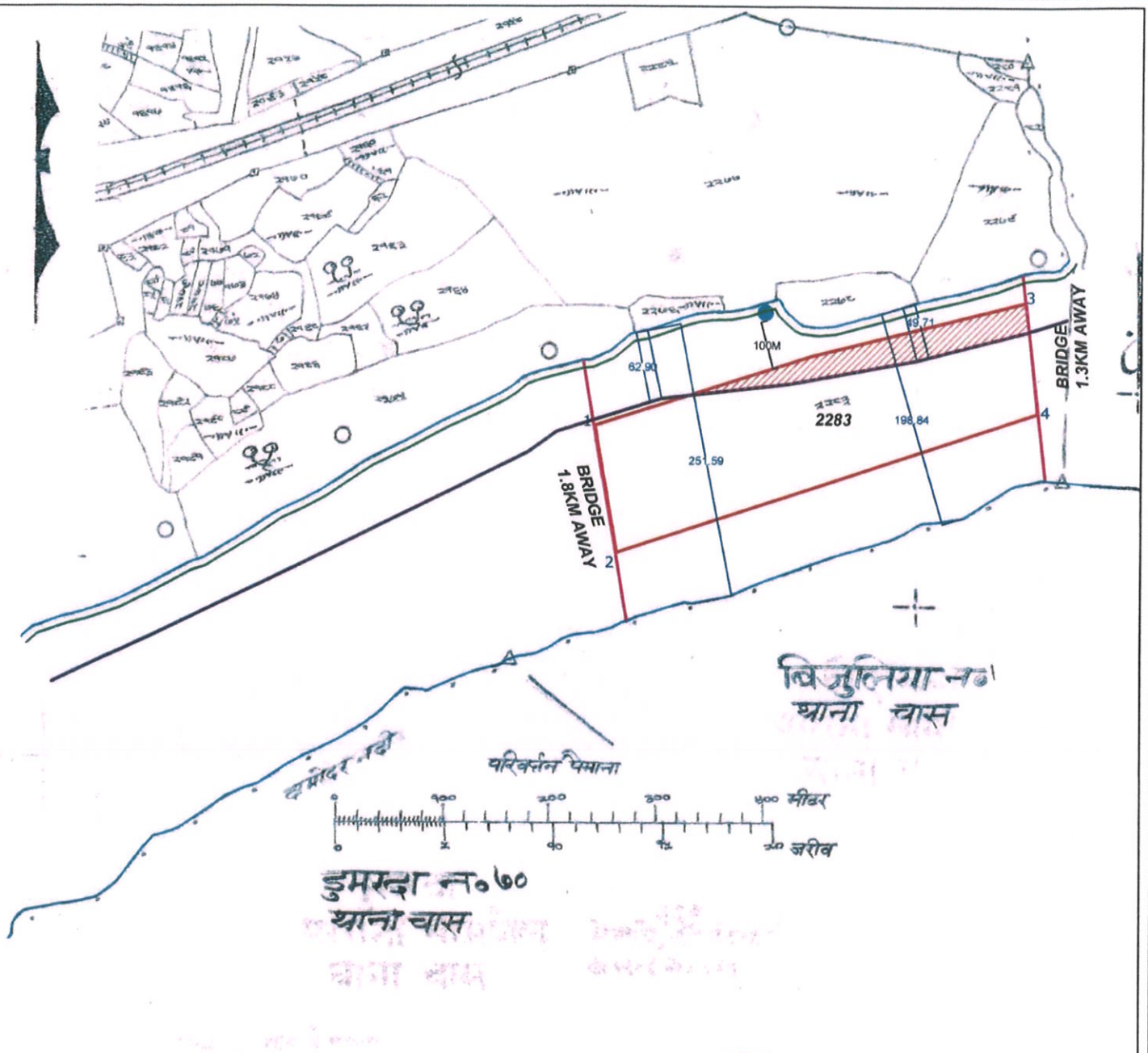
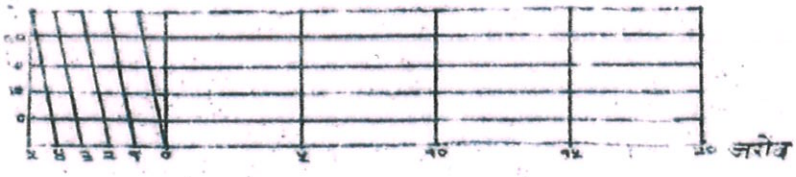
Jharkhand, Ranchi



पैमाना १" = १ मील



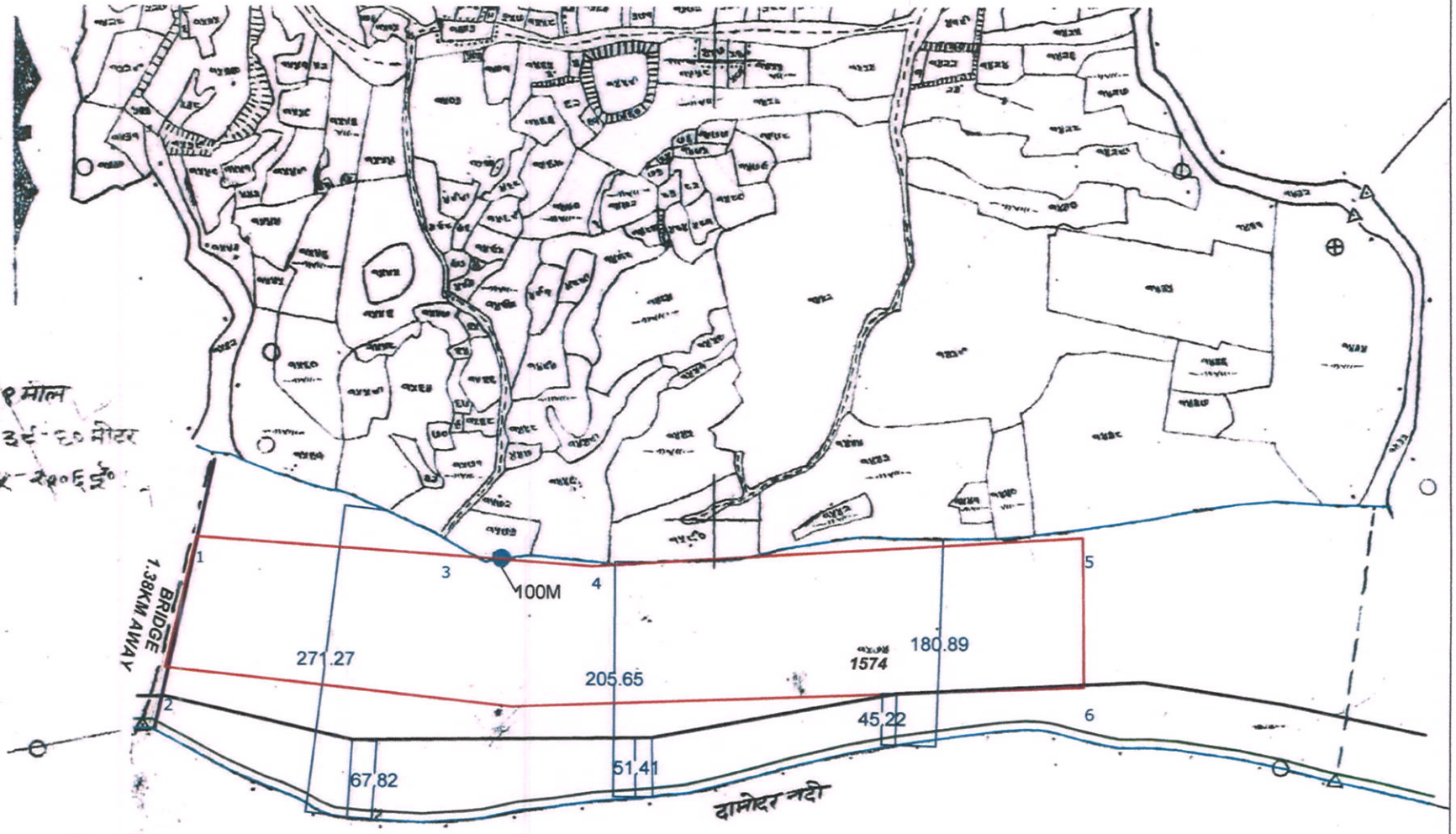
INDEX

- PROPOSED GHAT/ MINING AREA
- OTHER PLOTS
- RIVER EDGE
- NO MINING ZONE
- ½ TH OF THE RIVER WIDTH
- 7.5M SAFETY ZONE

SI. NO.	MINING AREA IN HA.	NO MINING AREA IN HA.
1.0	4.52	0.64

MOUZA - SINGRA
THANA - BAGHMARA,
THANA NO. - 347, DISTRICT - DHANBAD, JHARKHAND
PLOT NO. 2283 (P) OR 6158(P), AREA - 4.52 HA.

State Level Environment Impact Assessment Authority
Approved
Jharkhand, Ranchi



पैमाना १६" = १ मील
१ सेंटी मीटर = ३९.८० मीटर
सन् २००५-२००६ ई०

Approved
State Level Environment Impact Assessment Authority * Jharkhand, Ranchi *

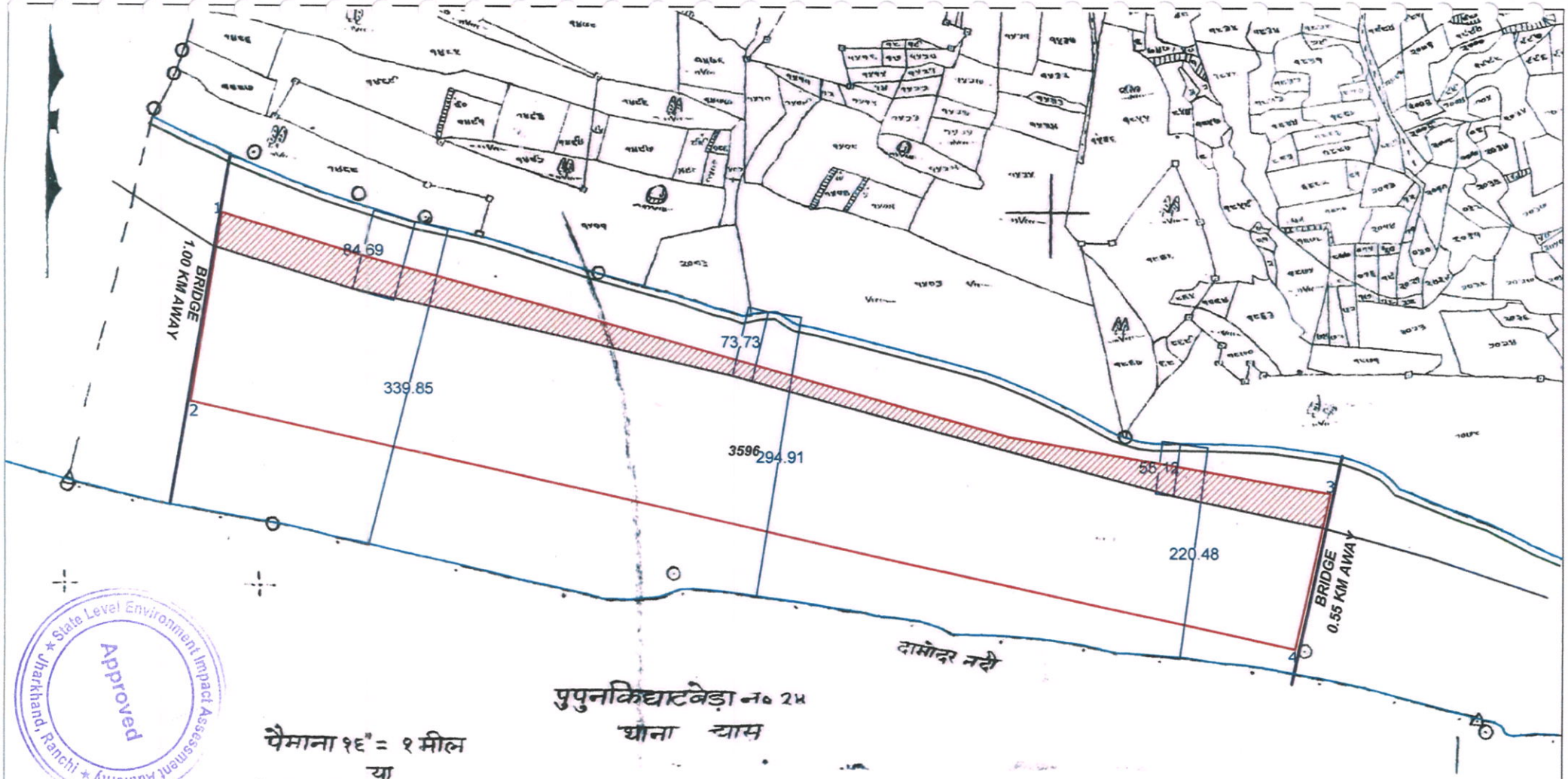
कुमड़ो नं०२८

INDEX

- PROPOSED GHAT/ MINING AREA
- OTHER PLOTS
- RIVER EDGE
- NO MINING ZONE
- ½ TH OF THE RIVER WIDTH
- 7.5M SAFETY ZONE

SI. NO.	MINING AREA IN HA.	NO MINING AREA IN HA.
1.0	9.87	0.00

MOUZA - NAGDA
THANA - BAGHMARA,
THANA NO. - 327, DISTRICT - DHANBAD, JHARKHAND
PLOT NO. 1574 (P), AREA - 9.87 HA.



पुपुनकिघाटबेड़ा न० २४
थाना चास

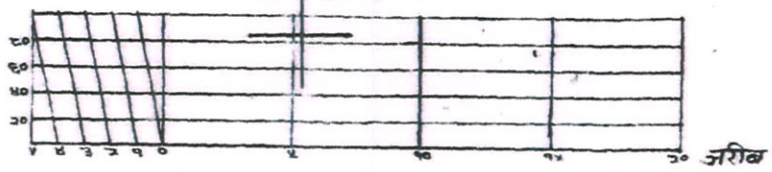
पैमाना १६" = १ मील
या
१ सेन्टी मीटर = ३९·६० मीटर
सन् १९९७-९८

State Level Environment Impact Assessment Authority
Approved
Jharkhand, Ranchi

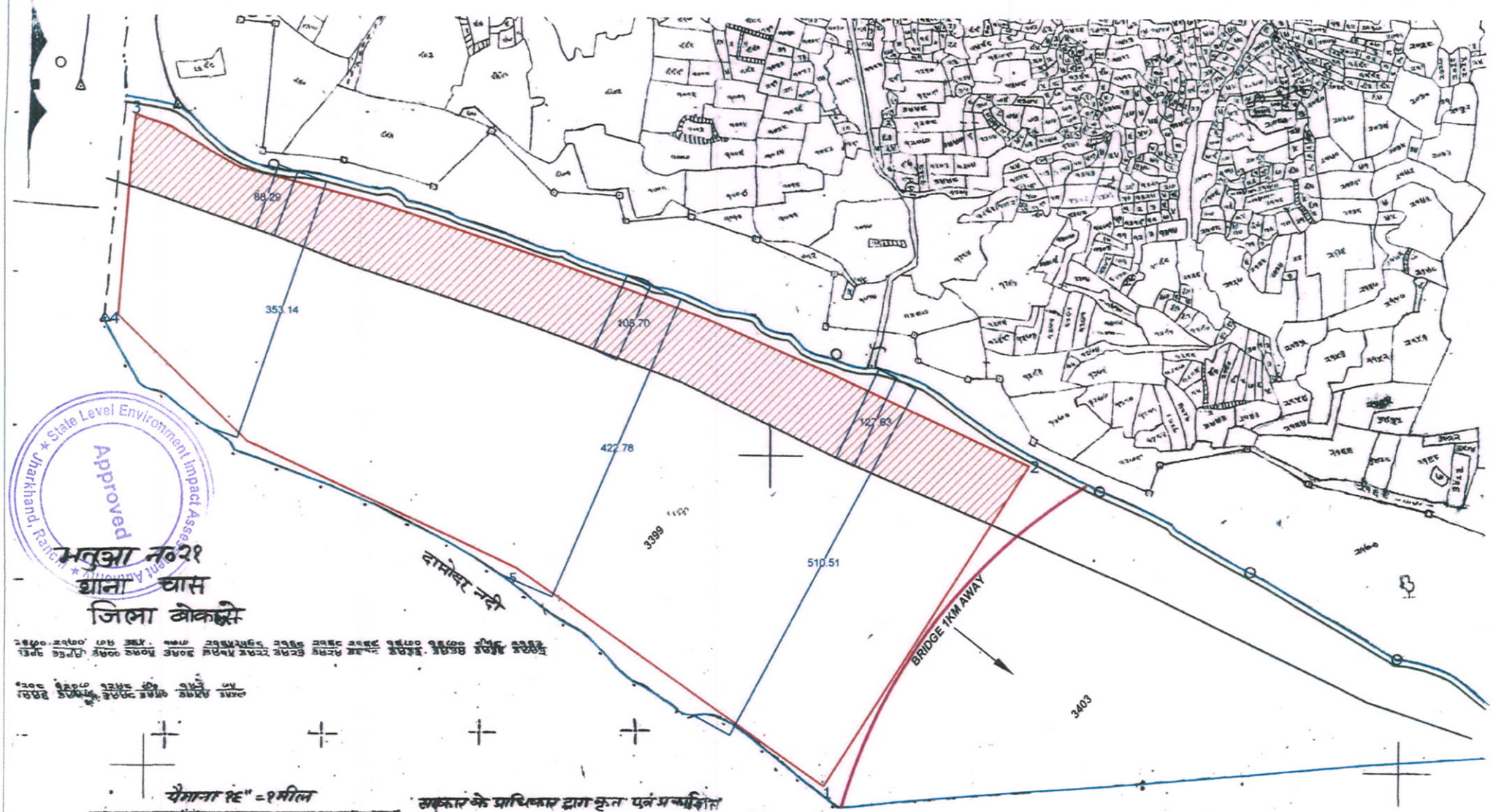
SI. NO.	MINING AREA IN HA.	NO MINING AREA IN HA.
1.0	20.00	3.04

INDEX
- PROPOSED GHAT/ MINING AREA
- OTHER PLOTS
- RIVER EDGE
- NO MINING ZONE
- ½ TH OF THE RIVER WIDTH
- 7.5M SAFETY ZONE

पैमाना १६"=१ मील



MOUZA - TELMOCHO
THANA - BAGHMARA,
THANA NO. - 321, DISTRICT - DHANBAD, JHARKHAND
PLOT NO. 3596 (P), AREA - 20.00 HA.

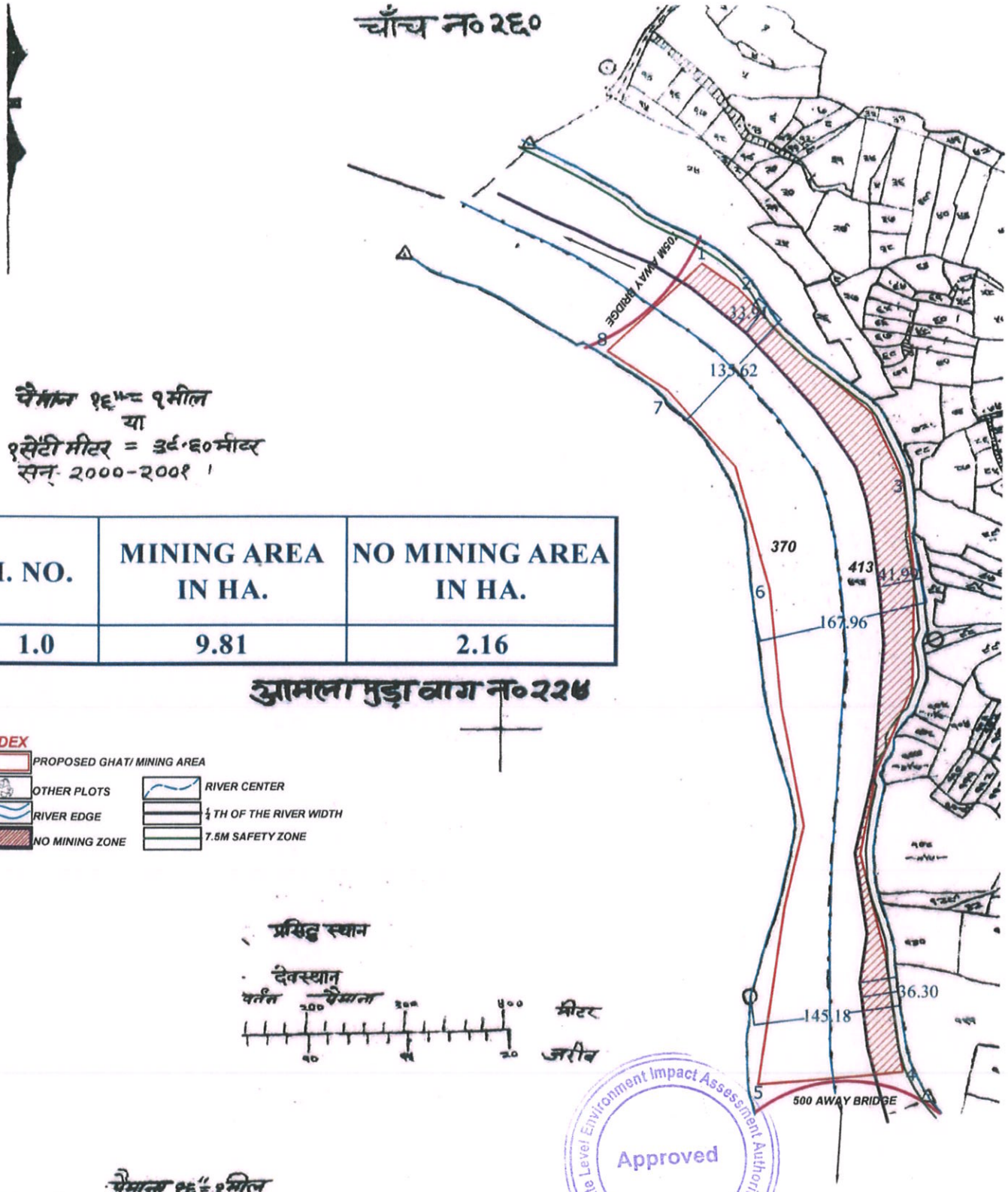


SI. NO.	MINING AREA IN HA.	NO MINING AREA IN HA.
1.0	45.00	10.78

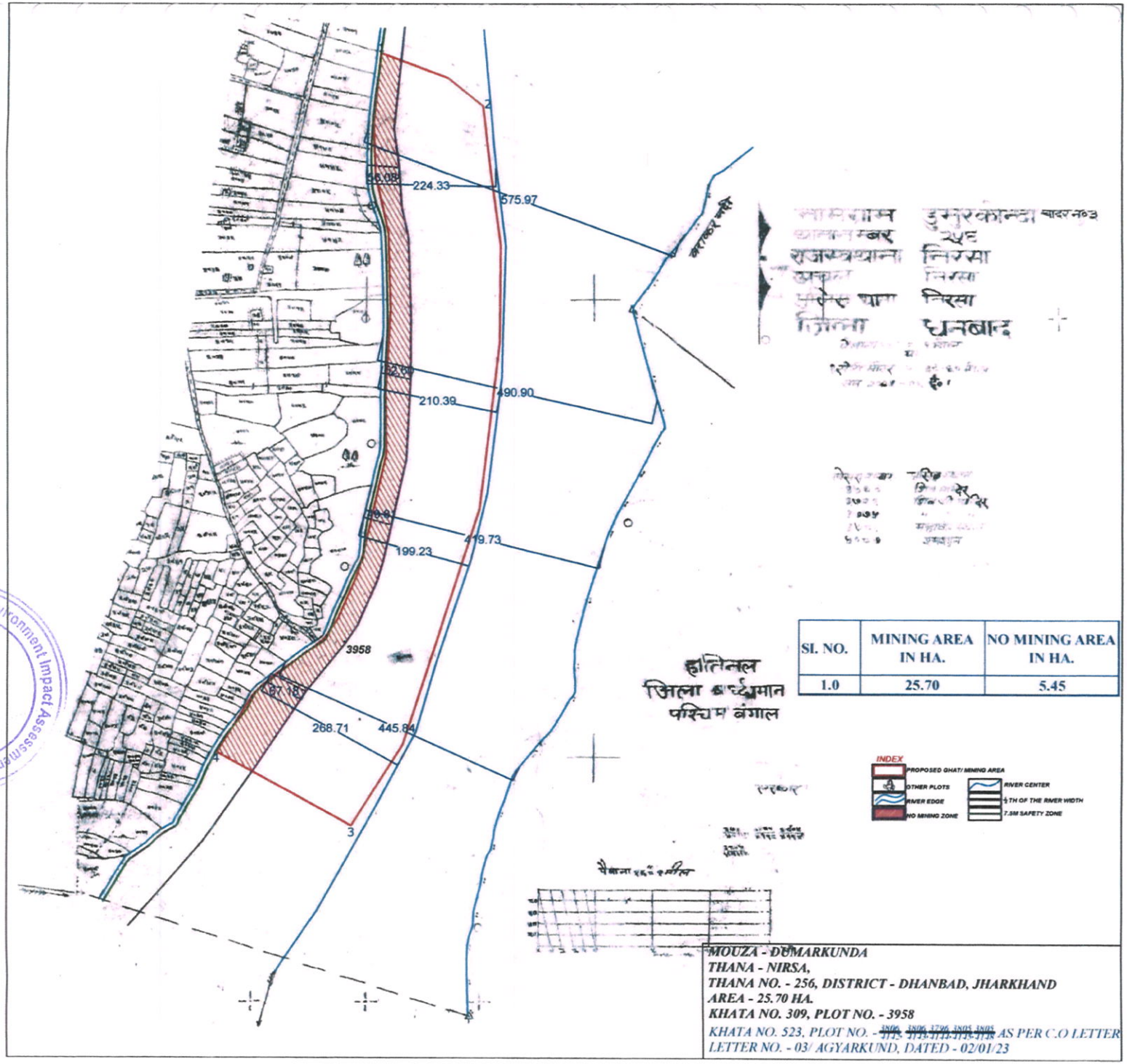
INDEX

- PROPOSED GHAT/ MINING AREA
- OTHER PLOTS
- RIVER EDGE
- NO MINING ZONE
- ½ TH OF THE RIVER WIDTH
- 7.5M SAFETY ZONE

MOUZA - LOHPITI
THANA - BAGHMARA,
THANA NO. - 319, DISTRICT - DHANBAD, JHARKHAND
PLOT NO. 3399 (P), AREA - 45.00 HA.



MOUZA - JAJALPUR & CHANCH
THANA - NIRSA, ANCHAL - KELIYASOL
THANA NO. - 261, DISTRICT - DHANBAD, JHARKHAND
PLOT NO. 370(P) & 413(P) (AS PER C.O. - KHATA NO. 77, PLOT NO. - 108/413), AREA - 9.81 HA.



SI. NO.	MINING AREA IN HA.	NO MINING AREA IN HA.
1.0	25.70	5.45

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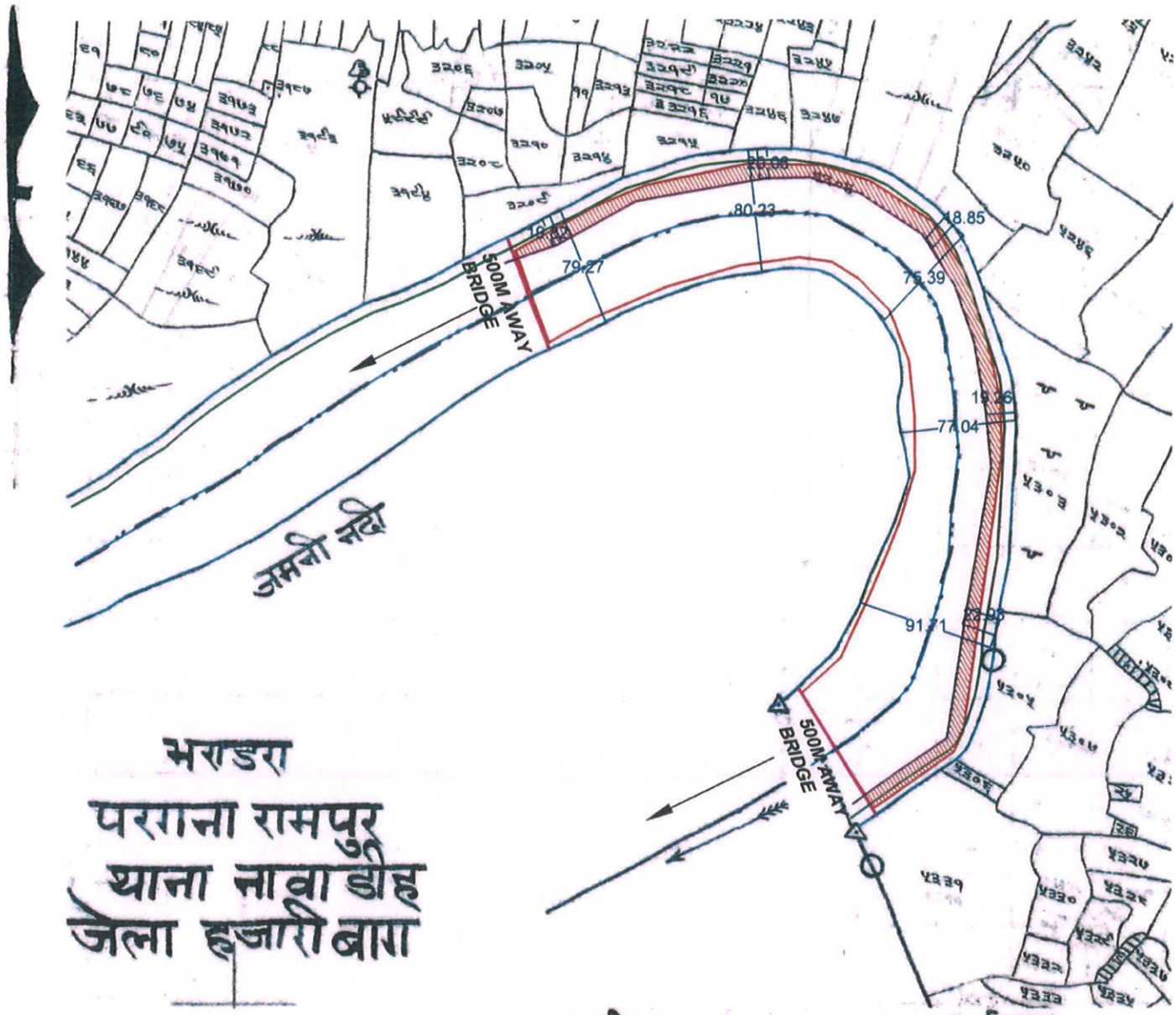
State Level Environment Impact Assessment Authority * Jharkhand, Ranchi *

MOUZA - DUMARKUNDA
THANA - NIRSA,
THANA NO. - 256, DISTRICT - DHANBAD, JHARKHAND
AREA - 25.70 HA.
KHATA NO. 309, PLOT NO. - 3958
KHATA NO. 523, PLOT NO. - ~~3806, 3806, 3796, 3805, 3805~~ AS PER C.O LETTER
LETTER NO. - 03/ AGYARKUND, DATED - 02/01/23



भराडरा
परगना रामपुर
थाना नावाडीह
जेला हजारीबाग

नकशा का स्केल- एकमाइल वराबर १६ ईन्च
सन १९६५-६६ ईस्वी

0 100 200 300 400 Metres
0 5 10 15 20 Guntrsenains

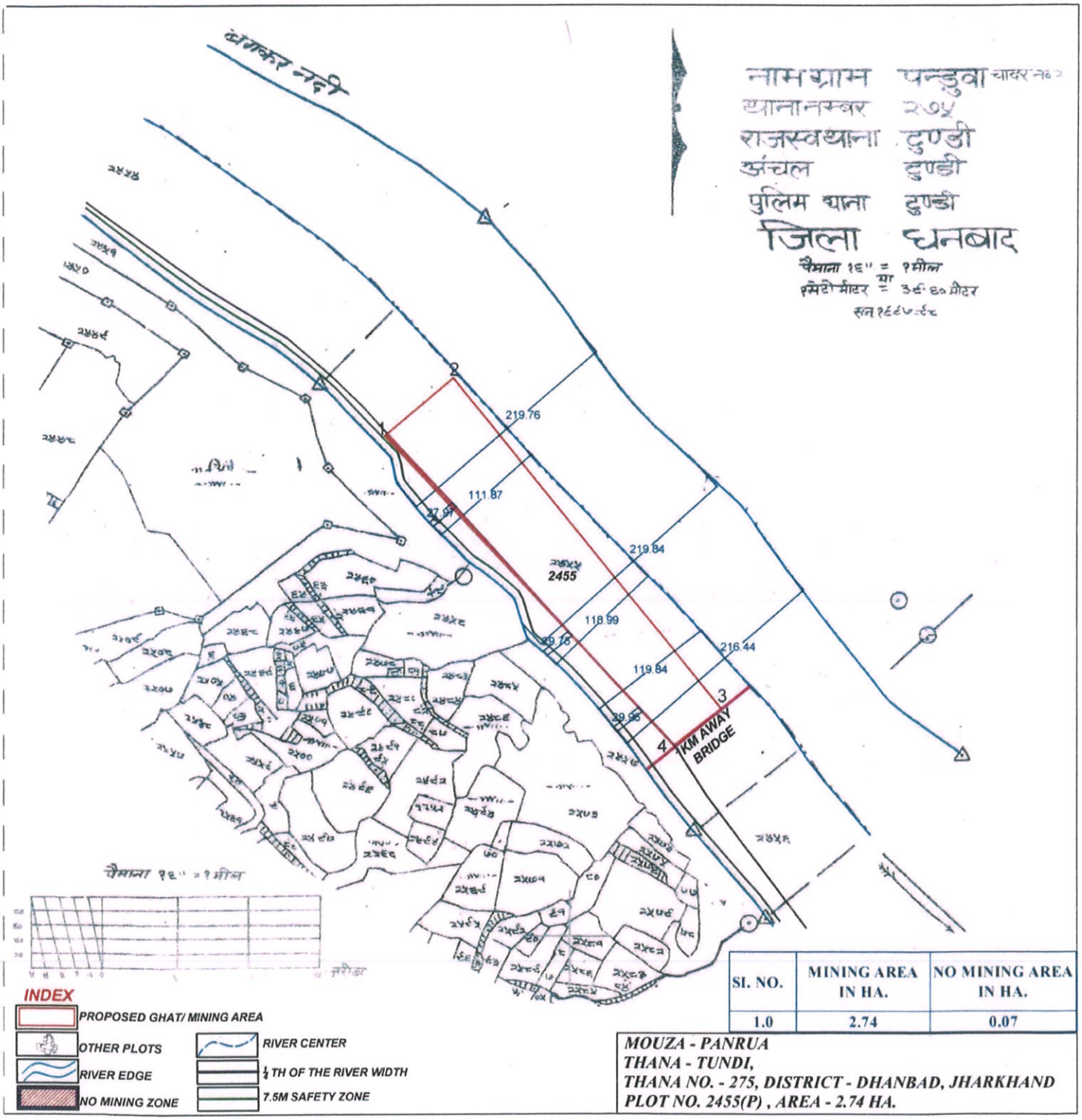
Approved
State Level Environment Impact Assessment Authority
Jharkhand, Ranchi

INDEX

- PROPOSED GHAT/ MINING AREA
- OTHER PLOTS
- RIVER EDGE
- NO MINING ZONE
- RIVER CENTER
- ¼ TH OF THE RIVER WIDTH
- 7.5M SAFETY ZONE

SI. NO.	MINING AREA IN HA.	NO MINING AREA IN HA.
1.0	4.13	0.67

MOUZA - HARIHARPUR
THANA - TOPCHANCHI,
THANA NO. - 0014, DISTRICT - DHANBAD, JHARKHAND
PLOT NO. 5304(P) , AREA - 4.13 HA.



SI. NO.	MINING AREA IN HA.	NO MINING AREA IN HA.
1.0	2.74	0.07

MOUZA - PANRUA
THANA - TUNDI,
THANA NO. - 275, DISTRICT - DHANBAD, JHARKHAND
PLOT NO. 2455(P) , AREA - 2.74 HA.

State Level Environment Impact Assessment Authority ★ Jharkhand, Ranchi ★
Approved

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 Dhanbad District*

Respected Sir,
With reference to the subject cited above, DSR Sand for Dhanbad District has been submitted to your office Vide letter No.-328/Khanna, Dated-03/03/2023, 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.-416/M, Dhanbad, 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.-59**
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.-75.**
4.	List of Category-I detailed properly in tabulated format and given all information.	Already given Category-I in **Page No.-76-78**
5.	The sand ghats/leases have not to proposed on theconfluence/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.-138 to 139**
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

State Level Environment Impact Assessment Authority ★ Approved ★ Jharkhand, Ranchi

Atmos Sustainable Solutions P. Ltd.

		SH-100Mtr Dist. Metal Road-50Mtr Habitation-200Mtr**(CO Letter are Enclosed in Annexure-I)** 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 3/4th of the river width and mining should be restricted within 60% of the mineable reserve.	Complied in **Annexure-20**
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 Jharia, Putki, Baghmara, Keliasol, Egarkunda, Topchanchi& Purvi Tundi(enclosed **as Annexure-1),** it is verified that all the identified ghats of Dhanbad District are not crossing any inter-district or inter-state boundary.

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

Thanking You

Sincerely

Asst. Director Geology
Bokaro

Aimos Sustainable Solutions P. Ltd.

State Level Environment Impact Assessment Authority
Approved
Jharkhand, Ranchi

झारखण्ड सरकार

उपायुक्त–सह–जिला दण्डाधिकारी का कार्यालय, धनबाद।

(खनन शाखा)

–:आदेश:–

धनबाद जिलान्तर्गत तैयार किये जा रहे बालू खनिज के DSR के बावत SEAC द्वारा उनके 99th बैठक में दिये गये दिशा–निदेश के आलोक में DSR के प्रत्येक पन्ना पर हस्ताक्षर करने हेतु श्रीमति रिना ओड़िया, सहायक निदेशक, भूतत्व, जिला भूतात्विक कार्यालय, बोकारो को प्राधिकृत किया जाता है।

23/12/23

उपायुक्त, धनबाद।

ज्ञापांक : 261 धनबाद, दिनांक– 23/12/2023

प्रतिलिपि :– श्रीमति रिना ओड़िया, सहायक निदेशक, भूतत्व, जिला भूतात्विक कार्यालय, बोकारो को सूचनार्थ एवं अनुपालनार्थ प्रेषित।

प्रतिलिपि :– वन प्रमण्डल पदाधिकारी, धनबाद/अनुमण्डल पदाधिकारी, धनबाद/जिला खनन पदाधिकारी, धनबाद/कार्यपालक अभियंता, लघु सिंचाई प्रमण्डल, धनबाद/क्षेत्रीय पदाधिकारी, झारखण्ड राज्य प्रदूषण नियंत्रण पर्षद, धनबाद को सूचनार्थ एवं आवश्यक कार्रवाई हेतु प्रेषित।

23/12/23

उपायुक्त, धनबाद।