



सत्यमेव जयते

राज्य स्तरीय पर्यावरण समाघात निर्धारण प्राधिकरण, झारखण्ड
State Level Environment Impact Assessment Authority, Jharkhand
पौधशाला परिसर, धुर्वा, बस स्टैण्ड, के समीप, पो0+थाना-धुर्वा, राँची झारखण्ड 834004
ई-मेल.chr-seiaajhr@gov.in एवं msseiaa.jhk@gmail.com; वेबसाइट. www.jseiaa.in

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दिनांक:- 10/07/2024

प्रेषक:

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

सेवा में,

उपायुक्त,
जिला : रामगढ़,
झारखण्ड।

विषय : रामगढ़ जिला का पत्थर खनिज से संबंधित DSR के अनुमोदन के संबंध में।

प्रसंग : आपका कार्यालय का पत्रांक-696/एम0, दि0-05.06.2024।

महाशय,

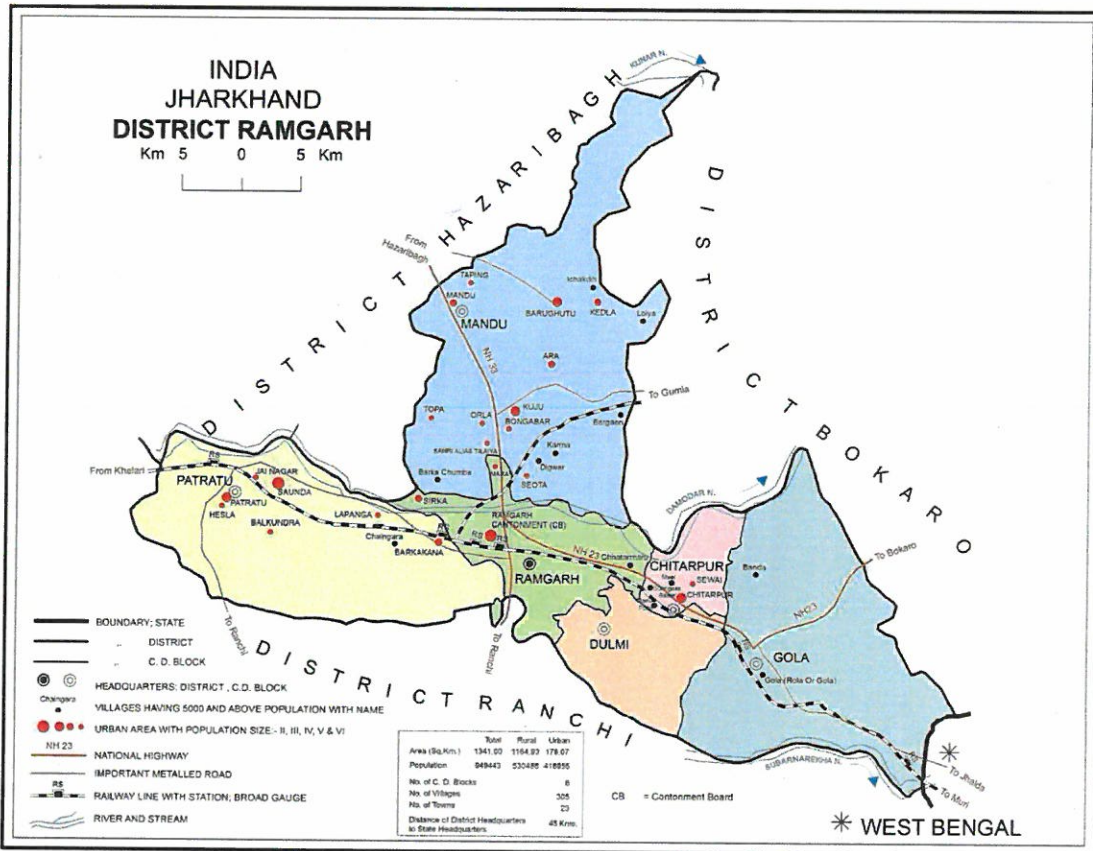
उपर्युक्त विषयक आपके कार्यालय के प्रासंगिक पत्र दिनांक 05.06.2024 द्वारा रामगढ़ जिला का पत्थर खनिज से संबंधित DSR की एक प्रति अनुमोदन हेतु दिनांक 20.06.2024 को SEIAA कार्यालय में समर्पित किया गया।

तदनुसार SEAC, झारखण्ड की 114वीं बैठक दिनांक 25.06.2024 से दिनांक 29.06.2024 में संबंधित DSR का आकलन किया गया तथा निम्नवत बिन्दुओं पर आपकी सहमति प्राप्त करते हुए DSR अनुमोदन हेतु SEIAA को अनुशंसा भेजा गया :

1. The final DSR had been placed in the public domain for 21 days from the 20.10.2023. As per the Sub Divisional Committee of District Ramgarh, no comments / observations were obtained.
2. The DSR has been prepared as per the format provided in the notification no SO 3611 (E), dated-25.07.2018 issued by MoEF & CC Govt. of India. The DSR submitted has been **prepared** by the Sub-Divisional Committee for final approval. All the aspects of the notification dated 25.07.2018 are incorporated in the DSR and found to be satisfactory

RAMGARH DISTRICT SURVEY REPORT (UPDATED) FOR MINOR MINERALS (STONE) OTHER THAN SAND MINING OR RIVER BED MINING

*As per Notification No.- S.O.3611 (E), dated: 25th July, 2018, of
Ministry of Environment Forest and Climate change, Government of India, New Delhi*



JUNE, 2024



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ANNEXURE

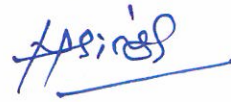


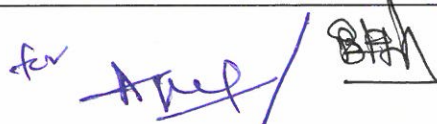



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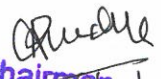
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MEMBERS IN PREPARATION OF THIS DISTRICT SURVEY REPORT

District Mining Officer, Ramgarh	
Assistant Director, Geology, Hazaribagh	
Regional Officer, State Pollution Control Board	
Executive Engineer, Minor Irrigation	
Sub-Divisional Officer, Ramgarh	
Divisional Forest Officer, Ramgarh	
Deputy Commissioner, Ramgarh	
Member Secretary, State Level Environment Impact Assessment Authority, Jharkhand	


Member
10/7/24
State Level Environment Impact
Assessment Authority, Jharkhand


Member Secretary
State Level Environment
Impact Assessment Authority
Jharkhand


Chairman
10/7/2024
State Level Environment Impact
Assessment Authority, Jharkhand

CHAPTER - I INTRODUCTION

1.1 Regulatory Frame Work

EIA notification 1994 published by MoEF & CC mandated that all mining project of all major minerals having lease area more than 5Ha. will have to obtain environment clearance from designated regulatory authority. Mining projects for minor minerals were exempted from obtaining environment clearance.

EIA notification No. S.O. 1533 (E) dated 14/09/2006 mandates that all activities listed in the schedule attached with the notification are required to obtain environment clearance from competent regulators. Mining activities are listed at Sl. No. 1(a) in the schedule. This notification exempted mining activities having lease area less than 5 Ha. from obtaining environment clearance.

Hon'ble Supreme Court in its judgement at 27th February, 2012 in 1A No. 12-13 of 2011 in special leave petition (C) No. 10628-19629 of 2009 in the matter of Deepak Kumar VS State of Haryana & other made prior environment clearance mandatory for minor minerals irrespective of area of mining lease.

In order to comply with judgment of Hon'ble Supreme Court the MoEF & CC issued S.O. 141(E) dt. 15/01/2016. Further the MoEF & CC vide notification S.O. 3611 (E) dt. 25/07/2018 provided the details on structure of DSR for (Minor Minerals) other than riverbed / sand mining projects.

1.2 Structure of District Survey Report as per MOEF & CC

The District Survey Report for minor minerals other than sand mining or River bed mining shall be as per structure mentioned below: -

FORMAT FOR PREPARATION OF DISTRICT SURVEY REPORT FOR MINOR MINERALS OTHER THAN SAND MINING OR RIVER BED MINING

- (1) Introduction;
- (2) Overview of Mining Activity in the District;
- (3) General Profile of the District;
- (4) Geology of the District;
- (5) Drainage of Irrigation pattern;
- (6) Land Utilisation Pattern in the District: Forest, Agricultural, Horticultural, Mining etc.
- (7) Surface Water and Ground Water scenario of the district
- (8) Rainfall of the district and climatic condition;
- (9) Details of the mining leases in the District as per the following format



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Sl. No.	Name of the Miner	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 (1st/2nd...renewal)	
						From	To	From	To
1	2	3	4	5	6	7	8	9	10

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

(10) Details of Royalty or Revenue received in last three years;

(11) Details of Production of Minor Mineral in last three years;

(12) Mineral Map of the District;

(13) List of Letter of Intent (LOI) Holders in the District along with its validity as per the following format:

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



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- (14) Total Mineral Reserve available in the District;
- (15) Quality /Grade of Mineral available in the District;
- (16) Use of Mineral;
- (17) Demand and Supply of the Mineral in the last three years;
- (18) Mining leases marked on the map of the district;
- (19) details of the area where there is a cluster of mining leases viz. number of mining leases, location (latitude and longitude);
- (20) Details of Eco-Sensitive Area, if any, in the District;
- (21) Impact on the Environment (Air, Water, Noise, Soil, Flora & Fauna, land use, agriculture, forest etc.) due to mining activity;
- (22) Remedial Measures to mitigate the impact of mining on the Environment;
- (23) Reclamation of Mined out area (best practice already implemented in the district, requirement as per rules and regulation, proposed reclamation plan); (24) risk Assessment & Disaster Management Plan;
- (24) Risk Assessment & Disaster Management Plan;
- (25) Details of the Occupational Health issues in the District. (Last five-year data of number of patients of Silicosis & Tuberculosis is also needs to be submitted);
- (26) Plantation and Green Belt development in respect of leases already granted in the District;
- (27) Any other information.



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Chapter – II Overview of Mining Activity in the District;

The mineral resources of Ramgarh have played a great role in industrialization, social and economic development of the district.

Ramgarh is rich in minerals such as;

- ✓ Coal
- ✓ Coal -Bed-Methane
- ✓ Limestone
- ✓ Fire Clay
- ✓ Granite-Gneiss

As in other districts of Jharkhand, Ramgarh district too is endowed with rich mineral resources. In the district, minerals such as Coal, Limestone, Fire Clay, China Clay, and Quartz are found. These can be termed as Major Minerals. Minor minerals such as Granite, sand etc. are also available in the District.

Presently, there are 16 running stone leases in the district. Details are given in table 8.



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Chapter – III General Profile of the District;

Table 1 General Profile of the District

District	Ramgarh
Headquarter	Ramgarh
No. of Sub Division	1
No. of Blocks	6 ➤ Patratu ➤ Ramgarh ➤ Chitarpur ➤ Mandu ➤ Dulmi ➤ Gola
No. of Panchayats	143
No. of Villages	351
No. of Police Station	10
Area (Sq. Km.)	1341.00
Water Bodies	Damodar, Naikari, Bhervi or Bhera, Bokaro, Hurhuri, Gomti, Barki, Kurum, Kochi, Sherbhuki, Dhobdhab & Subarnarekha River
Toposheet	73E/2, 73E/5, 73E/6, 73E/9, 73E/10, 73E/11, 73E/14 and 73E/15
Co-ordinate	23° 25' 20.50" to 23° 57' 40.70" N 85° 11' 52.54" to 85° 53' 13.21" E
Total Population	949443
Male Population	494230
Female Population	455213
Percentage urban Population	44.13
Percentage Rural Population	55.87
Sex Ratio	921
Person Percentage Literacy	596497 (73.17 %)
Male Percentage Literacy	350031 (82.44 %)
Female Percentage Literacy	246466 (63.09 %)
ST Population Percentage	201166 (21.19 %)
SC Population Percentage	106356 (11.20 %)
Total Workers	312125 (32.87 %)
Total Male Worker	234202 (47.39 %)
Total Female Worker	77923 (17.12 %)
Total Main Workers	221112 (23.29 %)
Total Male Main Workers	183137 (37.06 %)
Total Female Main Workers	37975 (8.34 %)
Total Marginal Worker	91013 (9.59 %)
Total Male Marginal Worker	51065 (10.33 %)



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Total Female Marginal Worker	39948 (8.78 %)
Total Non-Worker	637318 (67.13 %)
Total Male Non-Worker	260028 (52.61 %)
Total Female Non-Worker	377290 (82.88 %)

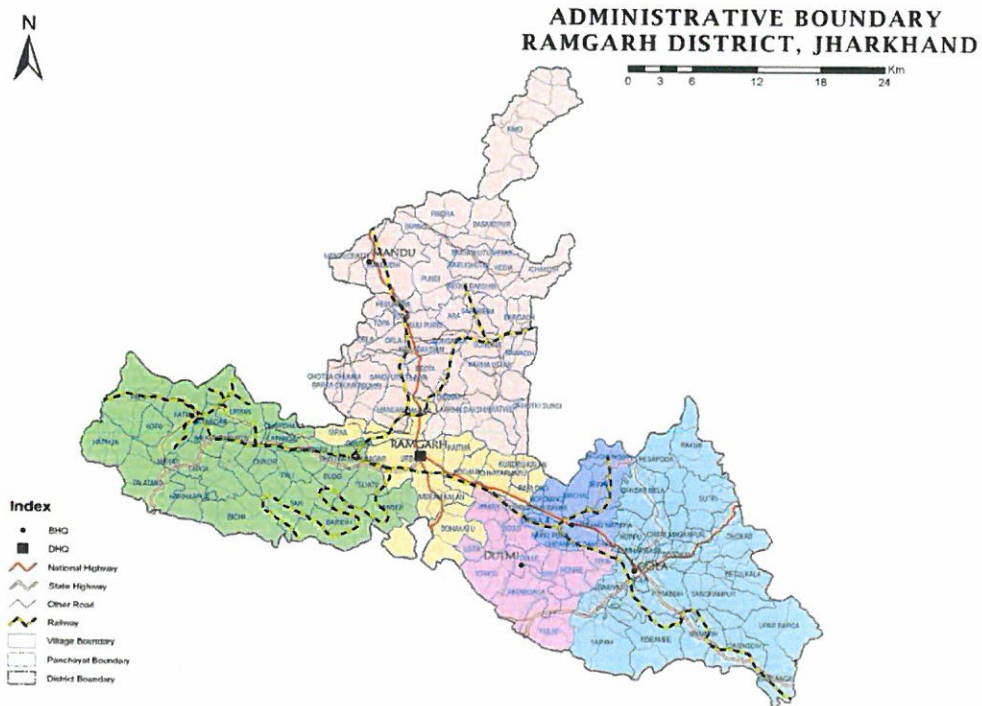
Connectivity

By Air : Birsa Munda Airport (45 km) at Ranchi is the nearest Airport.

By Rail : Ramgarh Cantt railway station

By Road : NH-33 passes through the District. Ramgarh is well connected to other major cities of the country via regular buses.

Ramgarh District has borders with: North and West: Hazaribagh District, North and East: Bokaro District, East: Purulia District (West Bengal), South: Ranchi District.



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Chapter - IV Geology of the District;

The District has long been famous as the home of the well-known ruby mica and several large coalfields. The portion of the Jharkhand mica belt and the coalfields that lie in this district are economically the most important.

The main geological formations of the district are the following:

- (1) Recent deposits of alluvium and laterite
- (2) Post Gondwana

(3) Gondwana System	}	Dykes of basic Cretaceo-Eocene			
		Igneous rocks			
		Dykes of basic Jurassic and Triassic Ultrabasic			
		Igneous rocks			
		Upper Damuda	Panchet	or	Lower Jurassic
			Mahadevas		Lower Triassic
			Panchet Series		Upper Permian
			Raniganj Series		
		Lower Damuda	Ironstone shales		Middle Permian
			Barakar Series		Lower Permian
			with Karharbari Formation		
			Talchir series		
			with glacial Upper carboniferous		
			Boulder bed		

- (4) Basic intrusives, meta dolerite, amphibolite and epidiorites
- (5) Mica pegmatites and granite pegmatites
- (6) Chhotanagpur granite gneiss
- (7) Dharwars-Crushed or fault breccia, garnet-amphibolite schist, Granulites, Schists, phyllites, Quartziteetc

The pegmatite represents the end products of the granite magma that had earlier formed the dome-gneiss. The pegmatite which carry mica, are always associated with mica-schists and gneisses, while pegmatite that traverses the dome-gneisses, does not contain workable quantities of mica. There are two types of pegmatite, namely, simple and complex. The simple pegmatite is a microcline-pegmatite, consisting essentially of microcline and quartz with subordinate muscovite, which is not usually in workable quantity.



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The complex pegmatite is mica-bearing. They are plagioclase mica – pegmatite. In addition to plagioclase and muscovite, they contain tourmaline, apatite, garnet and beryl. The minerals occur as big crystals. These do not traverse the granite-gneiss but are confined to the country rocks in the manner of lenses, and the schist inclusions in the granite and they follow the strike and foliation direction of the schist. The 'books' of mica are found on both the foot and the hanging walls of mica, occur quartz forms as a central core with books of mica on its two sides. The mica in the pegmatite is associated with peculiar grey quartz locally known as 'Karja' meaning black. There is another type of colloidal silica known as 'Jogni'. These are considered as a good indicator of mica. The quartz is followed by a massive zone of feldspars locally called 'Harwa' followed by massive quartz in the core known locally as 'Bhuja' which, as has been said above, may not be present always.

The next younger geological formation in the division belongs to the Gondwana System, the lower division of which comprises the most important coal measures of India. The coalfields of Hazaribagh district lying in the Damodar valley are the westerly continuation of the great belt of coalfields beginning with Raniganj coal-fields in Manbhum district. In Hazaribagh district they begin with the Bokaro followed by the South and North Karanpura coal-fields. All these were once part of a great spread of Gondwana Strata along a rift valley formed by through faulting along the Damodar valley- the rift being a branch of the main belt at through faulting following the line of the Narbada -son.

The oldest Gondwana rocks belong to the Talchir series. They consist of greenish splintery needle shales and greenish buff-colored earthy sandstones and trappoidshales. These have been found in almost every area of coal-bearing Damuda rocks. The basal boulder-bed is rather uncommon. The Talchirs rest over the older rocks with a great unconformity but are overlain by the Damudas with a slight unconformity. The discovery of striated boulders, and occasional faceted pebbles and glaciated pavements led to the conception of an Ice Age before the end of the Carboniferous period in Gondwanaland. The Talchir boulder – bed has the appearance of a re-deposited water-sorted moraine formation.

Plant fossils have been found in the shales overlying the boulder-bed with a slight unconformity. The best occurrence is that near Rikba (230 45': 850 22') in the Karanpura coal-field. The plant-bearing rocks are lithologically similar to the Talchirs but pass conformably to the Barakar strata.

Upper Gondwana strata are found in the Bokaro coal-field and the North Karanpura coal-field is under the Guhu Hill where Talchir rocks show up at the east and west ends of the field below the Barakars. The plinth of the Lugu Hill is made of sandstones which are correlated with the Mahadevas of the Satpura region and the Dubrajpur beds of the Rajmahal Hills. There is, therefore, a great break between the Panchets and these top beds.

In the North Karanpura field the Panchet beds are well developed along the base of several hills, those of Mahudih, Satpahari, Malhan (Gerwa), and Tarhi, where they are capped unconformably by the Supra-Panchets or Mahadevas.



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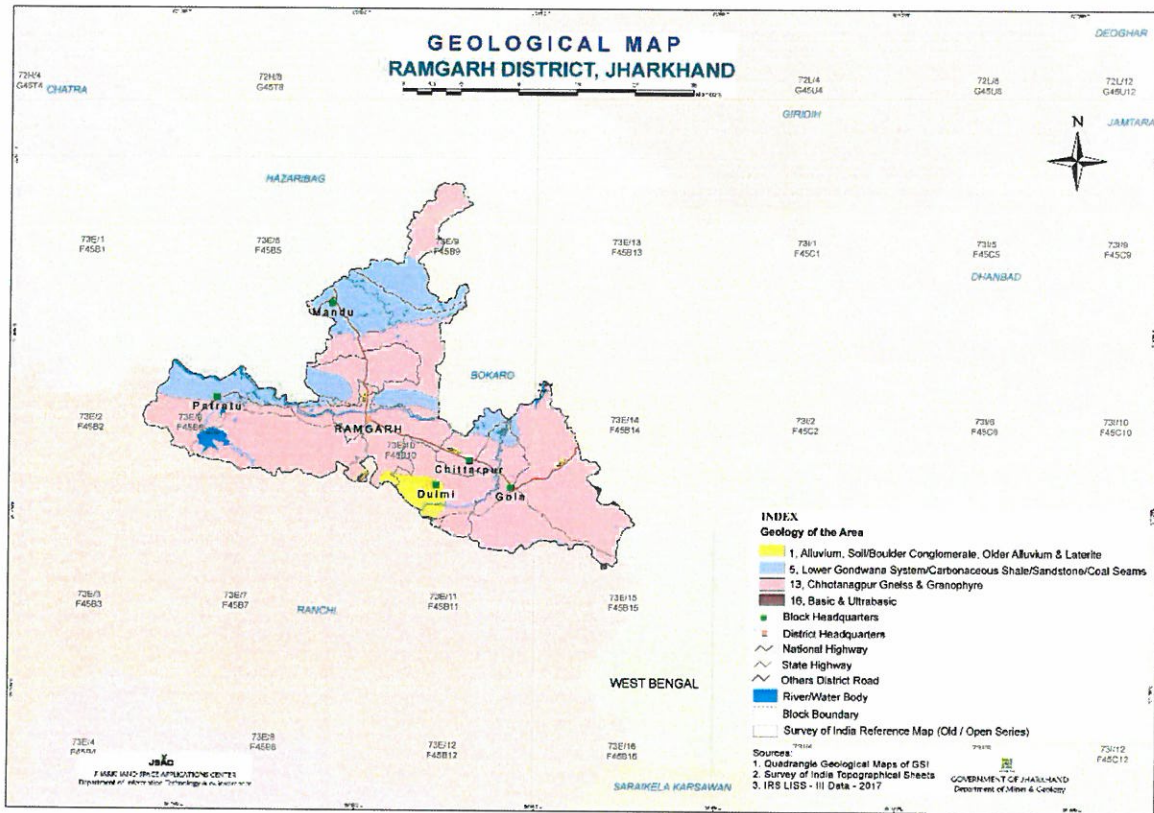


Figure 1 Geological Map of Ramgarh (Source-JSAC)



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Chapter - V Drainage of Irrigation pattern;

Damodar is the Main River which controls the drainage system of the district and it also forms a major river basin, comprising a number of tributaries. Important amongst them are: Naikari, Bhervi or Bhera and Bokaro river. Small Rivers are Hurhuri, Gomti, Barki, Kurum, Kochi, Sherbhuki, Dhobdhab etc. Subarnarekha River flow south eastern part of district. Tributaries of Subarnarekha are Kadamgara, Khatgara etc. (Fig-2)

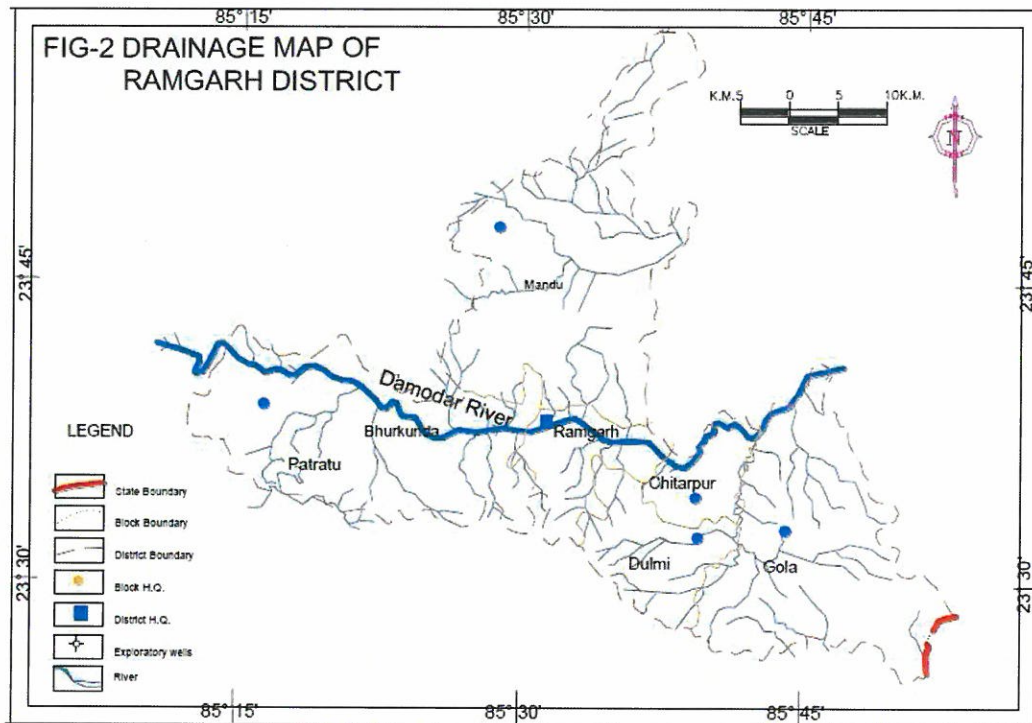


Figure 2 Drainage Map of Ramgarh (Source - CGWB)



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Table 2 Classification of Land Utilization Statistics in the district Ramgarh

Year	Reporting Area (2)	Forest Area (3)	Area under Non-agricultural use (4)	Barren & unculturable land (5)	Permanent pastures & other grazing land (6)	Land under misc. tree groves not included in Net area sown (7)	Culturable waste land (8)	Fallow land other than Current fallow (9)	Current fallow (10)	Net area sown (11)	
2016-17	303425.74	108381.97	32384.09	39506.14	6877.4	16721.97	4322.5	53433.81	91906.2	12353.21	
2017-18	329103.06	101580.04	35788.13	31462.69	5818.36	2191.93	3909.55	42246.97	64622.23	29070.49	
2018-19	328495.02	101490.04	23015.11	49871.39	5833.85	2192.03	4108.16	53225.41	64681.29	23555.07	
2019-20	329283.37	101474.54	35884.03	30979.43	5840.42	2194.93	3958.95	53585.08	3958.95	31809.73	
2020-21	329607.87	101501.14	26056.48	30992.05	5818.15	2194.93	3928.38	55006.3	64175.69	29431.07	

Source: District Statistical Handbook, Ramgarh (2021)

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Chapter - VII Surface Water and Ground Water scenario of the district

7.1 Surface Water

Table 3 Rivers and dam in the district

Rivers in the District					
S. No.	Name of the River	Area Drained (Sq. Km.)	% Area Drained in the District		
1	Subarnarekha	3.34	0.238		
2	Bhora	2.25	0.161		
3	Naikari	0.60	0.043		
4	Bokaro	4.81	0.343		
5	Damodar	19.47	1.387		

Dams in the District					
Sl. No.	Name	Purpose	River	Length (m)	Max Height above Foundation (m)
1.	Patratu Dam	Irrigation	Nalkari	3074	36
2.	Bhairwa Dam	Irrigation	Bhera	2469.5	29.57

7.2 Ground Water

List of blocks categorised based on Dynamic Groundwater Resource Assessment (2020)

- Patratu : Safe
- Ramgarh : Semi-Critical
- Chitarpur : Semi-Critical
- Mandu : Semi-Critical
- Dulmi : Safe
- Gola : Safe

(Source CGWB)

7.3 Hydrogeology

The district is having varied hydro geological characteristics due to which ground water potential differs from one region to another. It is underlain by Chotanagpur granite gneiss of pre-Cambrian age in three-fourth of the district.

Aquifer systems---Two types of aquifers are found. Weathered aquifer and fractured aquifers. Thickness of weathered aquifers varies from 10-20 m in granite terrain and 30-60m in lateritic terrain. In weathered aquifer ground water occurs in unconfined condition while in fractured aquifer ground water occurs in semi confined to confined condition.



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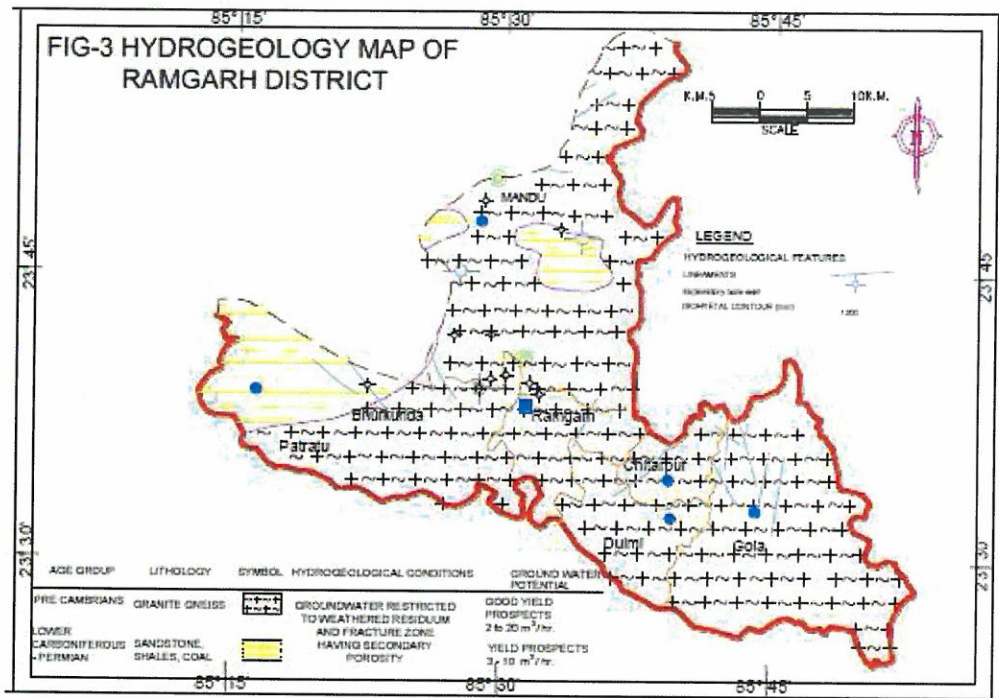


Figure 3 Hydrogeological Map of Ramgarh District (Source -CGWB)



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7.4 Depth to Water Level

Central Ground Water Board has established network of observation wells for monitoring of groundwater level to know the behaviour of ground water regime in the district. There are seven monitoring stations which are monitored every year in January, May, August & November.

During pre-monsoon season the minimum and maximum water level were observed as 5.94 mbgl at Patratu & Ramgarh and 7.92 mbgl at Mandu respectively.

The water level during the post-monsoon season of the district ranges from 2.79 at Ramgarh to 5.25 mbgl at Mandu respectively.

Table 4 Ground Water Level

Sl. No.	District	Administrative Units	Ground water Assessment Sub- Unit	Rainfall		Average Pre- monsoon Water level (mbgl)	Average Post- monsoon Water level (mbgl)	Average Water level Fluctuation (m)	Number of Ground Water Abstraction Structures for Irrigation (As per 5th MI Census)		
				(mm)	(mm)				DW	STW	DTW
1	Ramgarh	Chitarpur	Non-Command	1055.20	1251.20	6.76	4.02	2.74	340	0	0
2	Ramgarh	Dulmi	Non-Command	1050.50	1251.20	7.04	4.30	2.74	728	1	0
3	Ramgarh	Gola	Non-Command	1224.70	1251.20	6.97	4.74	2.23	1772	2	0
4	Ramgarh	Mandu	Non-Command	1350.70	1251.20	7.92	5.25	2.67	537	19	3
5	Ramgarh	Patratu	Non-Command	1158.10	1251.20	5.94	3.14	2.80	406	0	0
6	Ramgarh	Ramgarh	Non-Command	1473.20	1251.20	5.94	2.79	3.15	463	12	1

Source: Report on Dynamic Ground Water Resource of Jharkhand (2020) (Central Ground Water Board)

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The pre-monsoon and post-monsoon depth to water level has been presented in figure below as per Old Approved DSR (STONE);

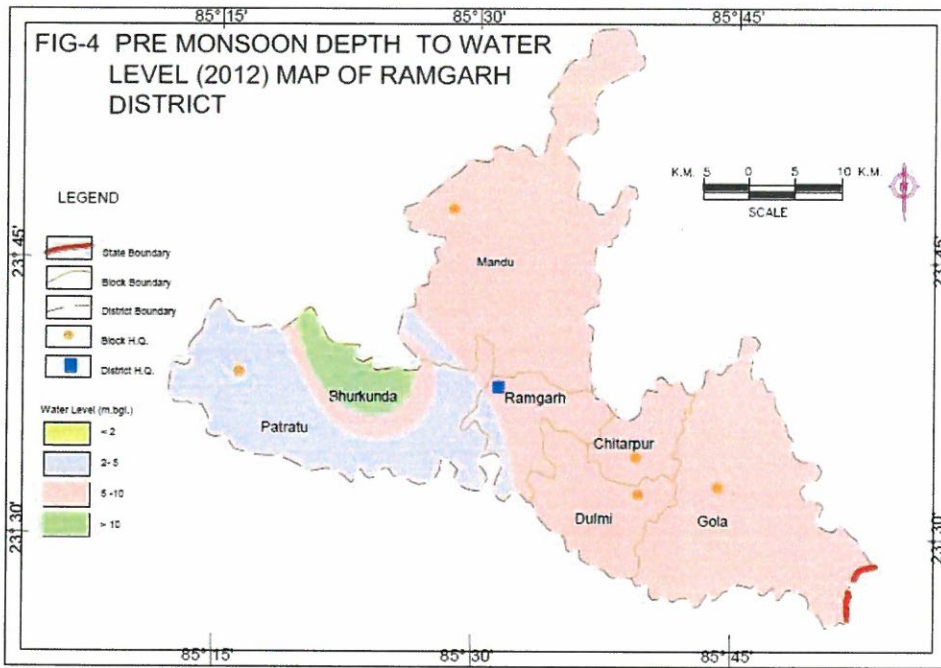


Figure 4 Pre-Monsoon Depth to Water Level (2012)

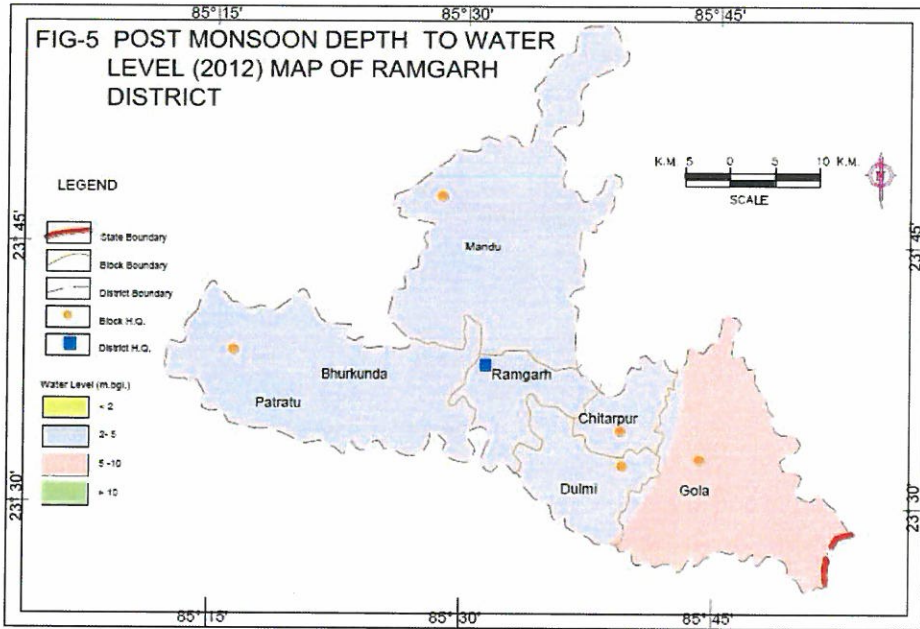


Figure 5 Post-Monsoon Depth to Water Level (2012)



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PRESENT SCENARIO

In the district, ground water table in series of open wells lying in the identified potential mining zones were measured in wells on 30/11/2023. Table below gives details of such wells, their location, ground RL, Depth of ground water table & RL of GWT.

Table 5 Zone Wise Ground Water Level

SL.NO	LATITUDE	LONGITUDE	GROUND RL (m)	Depth of Ground Water Table (m)
1	23°50'27.9"	85°29'36.4"	417	5.6388
2	23°49'59.9"	85°30'25.0"	418	1.9812
3	23°49'19.6"	85°31'30.3"	430	9.144
4	23°28'59.8"	85°35'25.3"	458	3.5052
5	23°27'29.8"	85°38'54.0"	458	2.7432
6	23°29'51.2"	85°37'44.3"	375	4.8768
7	23°29'52.3"	85°45'36.7"	320	6.2484
8	23°28'35.6"	85°46'54.3"	295	2.95656
9	23°28'31.9"	85°46'47.7"	296	5.6388
10	23°27'49.2"	85°44'59.7"	284	4.572
11	23°27'23.1"	85°43'11.4"	302	7.0104
12	23°34'54.8"	85°16'24.7"	437	4.572
13	23°37'35.8"	85°17'39.4"	384	2.4384
14	23°37'20.9"	85°17'31.1"	381	3.6576
15	23°38'25.4"	85°21'48.3"	368	1.8288
16	23°36'06.1"	85°31'31.7"	372	1.524
17	23°40'30.1"	85°26'43.3"	357	5.334
18	23°39'05.5"	85°30'39.2"	331	2.7432
19	23°34'43.5"	85°47'58.7"	385	3.2004
20	23°36'09.7"	85°47'48.6"	349	4.4196
21	23°36'13.2"	85°43'40.6"	320	7.0104
22	23°35'09.9"	85°40'23.3"	336	6.7056

Depth of ground water table at different location have been recorded based on following data:

- I. Data published by CGWB has some observation wells spread over the district. They have published data on depth of GWT corresponding to these observation wells. These data have been recorded in DSR.
- II. At several locations depth of GWT have been measured in open dug wells in different zones. These data have also been recorded in the DSR. Primary data & secondary data provided in the DSR are site specific.



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Actual depth of GWT at certain location may vary from observed data due to geological formation at this location. In such cases, GWT may be measured where need is felt.

7.5 Water Level Trend

Water level depends upon the storage of ground water development and variation in rainfall over a long period. The water level data of each station has been analyzed. The pre-monsoon and post monsoon long term water level trend has been calculated for the period of 2003 - 2012 (Table 6). The long term water level trend is showing declining trend between 0.120 - 0.361, 0.017 - 0.966 and 0.105- 0.236 m/ year for pre monsoon, post monsoon and all period respectively. The data is presented in table 6.

Table 6 Long Term Water Level Trend for Existing Hydrograph Network Stations in Ramgarh District (2003 - 2012)

Sl No.	Location	Pre monsoon trend (m/year)		Post monsoon trend (m/year)		All period (m/year)	
		Rise	Fall	Rise	Fall	Rise	Fall
1	Barkakhana	0.130902	-	-	0.017044	0.023708	-
2	Barwatola					0.887323	-
3	Chitarpur					0.247302	-
4	Gola	-	0.265455	-	0.366167	-	0.174324
5	Mandu	0.216907	-	-	0.071833	0.014737	-
6	Rajrappa	-	0.361325	-	0.432828	-	0.105296
7	Ramgarh	-	0.120714	-	0.966781	-	0.236389

7.6 Aquifer Parameters

Central Ground water Board has altogether drilled 17 no. of exploratory wells and 2 no. of observation wells in the district. Depth of drilling varies between 61-199 mbgl. Ten wells were drilled in Chotanagpur granite gneiss and seven wells were drilled in Gondwana formation. Thickness of weathered formation varies between 4 - 18 m. Highest weathered thickness was observed in Bhurkunda, Patratu block. Discharge of wells vary between 1.5 - 32.15 m³/hr. Highest discharge observed at Ramgarh exploratory well was 32.5 m³/hr. Static water level varies between 3.00 m -17.9 m 1 - 4 set of fractures were encountered between 22 and 176 m.

7.7 Ground Water Quality

Ground Water in the phreatic aquifers in Ramgarh District is alkaline in nature as Ph Ranges between 7.11-7.97 and the specific electrical conductance of ground water in phreatic zone during May 2011 was in the range of 1238 μ S/cm 25°C.

7.8 Ground Water Resource

As per the latest resource estimation carried out following GEC 97 methodology, the overall stage of ground water development in Ramgarh district is 39.03% indicating



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sufficient scope of development. Net ground water availability is 10357.88 ham whereas total draft ham. All blocks are under safe category except Ramgarh block which categorized as critical block with 94.29% stage of development.



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Chapter – VIII Rainfall of the district and climatic condition;

Table 7 Average Monthly Rainfall in the District of Ramgarh (Unit – mm)

Month (1)	Normal		Actual				(Millimetre)
	2016 (2)	2017 (3)	2018 (4)	2019 (5)	2020 (6)		
January	0.00	0.00	0.00	1.20	47.26		
February	0.00	0.00	0.00	37.65	9.73		
March	12.95	0.00	0.00	25.48	79.10		
April	0.00	0.00	12.40	7.06	43.81		
May	13.10	24.28	80.64	30.25	56.63		
June	95.87	158.32	68.64	85.66	173.60		
July	192.00	669.70	188.80	189.98	285.92		
August	302.60	44.82	253.40	189.98	295.92		
September	186.27	56.24	119.80	295.65	164.85		
October	9.35	56.20	5.90	193.66	36.46		
November	0.00	0.00	0.00	0.00	15.43		
December	0.00	0.00	29.40	10.41	0.00		
Total	812	1010	759	1067	1223		

Source: District Statistical Handbook, Ramgarh (2021)



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Climatic Conditions in the District

The climate of this district is mild hot summer, cool winter and well distributed rainfall in southwest monsoon season. The year may be divided into four seasons. The cold season starts by December and extends to the month of February, followed by the summer season which continues to about the beginning of June, when the monsoon arrives over the district. The period from June to September is of the southwest monsoon season. The post monsoon months October and November constitute a transition period from the monsoon to the winter conditions.

TEMPERATURE

There is no meteorological observatory in the district at Ramgarh. The description that follows is based on the records of Hazaribagh observatory in the neighbouring district. The cold season starts from the end of November when both day and night temperatures decrease rapidly with the advance of the season. January is the coldest month of the year with the mean maximum temperature at about 22°C and the mean minimum temperature at about 9°C. In winter months, during cold waves which affect the district in the wake of western disturbances which move across north India, the minimum temperature may go down to about 2°C to 3°C on individual days. From March, temperature begins to rise rapidly till first week of June. May is the hottest month with the mean maximum temperature at about 37°C and the mean minimum temperature at about 24°C. In latter part of the summer season i.e. May and June, the maximum temperature may sometimes reach to about 45°C on individual days. The day temperature drops rapidly while the drop in night temperatures is comparatively low with the advance of the southwest monsoon into the district towards the middle of June. The day temperature begins to decrease while the drop in the night temperature is appreciable with the withdrawal of the monsoon by about first week of October.

HUMIDITY

The relative humidity is generally high during the monsoon months and is about 80%. It is comparatively less during rest of the year. The driest part of the year is the summer season, when humidity is less than 35% in the afternoon.

CLOUDINESS

During the monsoon season, the sky is heavily clouded or overcast. In the rest of the year the sky is clear or lightly clouded. Clouding is generally more in the afternoon.

WINDS

Winds are generally light to moderate in the summer and monsoon season. During the period October to May, winds blow mostly from northwest. During the monsoon season, the winds are mostly from directions southwest or southeast in the mornings and from northwest in the afternoons.

SPECIAL WEATHER PHENOMENA

Storms and depressions originating in the Bay of Bengal during the post monsoon and southwest monsoon months move in a northwesterly direction towards the district or its neighbourhood causing widespread heavy rain and gusty winds. Dust storms and thunderstorms sometimes associated with squall occur occasionally during summer. But the highest incidence of thunderstorms is during the monsoon months. Fog occasionally occurs during the cold season.



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Chapter - IX Details of the mining leases in the District

Table 8 Details of the running mining leases in the District

S. No.	Name of the Miner	Name of the Lessee	Address & Contact No. of Lessee	Mining lease order No. & Date	Area of Mining Lease (Ha.)	Period of Mining Lease (Initial)	Period of MINING Lease (1st /2nd / Renewal)	Date of Commencement of Mining Operation	Status Working / Non Working	Captive / Non-Captive	Obtained Environmental Clearance	Location of the mining Lease (Lat/Long)	Method of Mining
1	पत्थर	मे० एस०एस० टैडिंग एजेन्सी, प्र०-श्री शैलन्ध कुमार मेहता	गाम- हुरहुल रोड, हजारीबाग	Letter No.: 177/M Date: 06/02/2017	4.856	21.08.17 से 10 वर्ष	NA NA	--	Working	Non-Captive	EC/SEIAA/15-16/1706/2015/2334 dt 30 Dec 2015	15 मौजा- कुन्दरुबुर्द, थाना- रामगढ़ खाता नं०- 137, प्लॉट नं० 1958 अंश, 1970 अंश Latitude. N 23°36' 13.6" to N 23°36' 21.0" Longitude. E 85°37'11.9" to E 85°37' 24.019"	Opencast
2	पत्थर	मे० देवन्ती प्रोजेक्ट्स प्रा० लि०, निदेशक- श्री लीलाम्बर बडाईक पिता- श्री माधो बडाईक	ग्रा०-उरॉव टोला नारो, पो०- पिस्का जगड़ी, थार०- नगड़ी, जिला-राँची ।	Letter No.: 1276/M Date: 13/09/2017	2.144	09.09.2017 से 10 वर्ष	NA NA	--	Working	Non-Captive	EC/DEIAA/16-17/07 DT 12 Aug 2017	16 मौजा- लोआडीह थाना- पतरालु खाता नं०-03 प्लॉट नं०-282 अंश Latitude: N 23°33' 42.11" to N 23°33' 51.74" Longitude: E 85°24' 08.07" to E 85°24' 15.50"	Opencast



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3	पत्थर	श्री मनोहर पाठक, पिता- श्री सत्यनारायण पाठक	ग्रा0 एवं पो0-भरेचनगर सांझी जिला-रामगढ़।	Letter No.: 1407/M Date: 31/10/2017	2.751	22.11.2017 से 10 वर्ष	NA	NA	Working	Non-Captive	EC/DEIAA/2016-17-08 dt 12 Aug 2017	मौजा- जरियो शाना- रामगढ़, नं0-109 खाता नं0-86, प्लॉट नं0-717 अंश, 1451 अंश Latitude: N 23°34' 23.97" to N 23°34' 31.67" Longitude: E 85°35' 40.53" to E 85°35' 48.84"	Opencast
4	पत्थर	श्री मिन्हाज खान, पिता- श्री जमाल अषरफ	ग्राम+पोस्ट- हेसला, शाना+जिला-रामगढ़	Letter No.: 1532/M Date: 01/12/2017	1.185	22.11.2017 से 10 वर्ष	NA	NA	Working	Non-Captive	EC/DEIAA/2016-17-09 dt 12 Aug 2017	मौजा- कजगी, शाना- माण्डु, नं0-141, खाता नं0-26, प्लॉट नं0-589, 590, 591, 592 Latitude: N 23°40' 43.37" to N 23°40' 46.12" Longitude: E 85°27' 53.95" to E 85°27' 56.96"	Opencast
5	पत्थर	श्री हर्षराज माईनिंग एल0एल0पी, पार्टनर श्री अभिषेक कुमार, पिता- श्री बंसी प्रसाद	ग्रा0- रामेवरम वाटिका, एन0 एच0 33, पो0- भरेचनगर, रामगढ़।	Letter No.: 109/M Date: 04/02/2020	3.205	28.03.2020 से 27.02.2025 तक	NA	NA	Working	Non-Captive	EC/SEIAA/2018-19/2103/2018/341 dt 02 Aug 2019	मौजा- चिटो शाना- पतरातु, 67 खाता नं0-17, 22, 14, 13, 40, 24 प्लॉट नं0- 267, अंश, 268, 269, 270 अंश, 271 एवं 273 अंश Latitude - 23° 35' 05.72" - 23° 35' 13.43" N Longitude - 85° 22' 27.86" - 85° 22' 35.22" E	Opencast
6	पत्थर	श्रीमति ललिता देवी, पति- रोहनराम बेदिया,	ग्रा0- पाली, पो0- भदानीनगर, थाना- पतरातु, जिला- रामगढ़।	Letter No.: 329/M Date: 06/05/2020	0.87	07.07.2020 से 04 वर्ष 11 माह	NA	NA	Working	Non-Captive	EC/SEIAA/2018-19/2141/2018/342 dt 02 Aug 2019	मौजा- पाली शाना- पतरातु खाता नं0-10, 46, 61, 92 प्लॉट नं0-35, 39, 40, 41, 43 अंश,	Opencast



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7	पथर	मै0 एलाईट पावर प्रोजेक्ट कस्ट्रक्शन प्रा0लि0,	ग्रा0- 3 डी0 वाटिका अपार्टमेंट, लाईन टेक रोड, रौंघी।	Letter No.: 1141 Date: 07/06/2022	3.844	20.07.2020 से 10 वर्ष	NA	NA	NA	NA	20.07.2020 से 10 वर्ष	3.844	Letter No.: 1141 Date: 07/06/2022	ग्रा0- 3 डी0 वाटिका अपार्टमेंट, लाईन टेक रोड, रौंघी।	मै0 एलाईट पावर प्रोजेक्ट कस्ट्रक्शन प्रा0लि0,	पथर	45 अंश, 131 अंश, 130 अंश Latitude - 23° 37' 05.71" - 23° 37' 10.23" N Longitude - 85° 22' 55.22" - 85° 23' 02.03" E	दुलमी स्टीन ब्लॉक मौजा- सीरू थाना- रजरप्पा खाता नं0- 107, प्लॉट नं0-171 अंश Latitude 23°32'58.81"N - 23°32'57.84"N Longitude 85°38'32.09"E - 85°38'31.60"E	Opencast
8	पथर	(1) कुमारी दीपमाला, पिता-श्री रविन्द्र पासवान, ग्राम- कटहल टोला, पो0+थाना- सोहराय, जिला- नालन्दा (बिहार) (2) श्रीमति मीना देवी, पति- श्री सतेन्द्र कु0 वर्मा, ग्राम0+पो0- राजगीर, थाना- राजगीर, जिला- नालन्दा (बिहार) ज्वदेमिततमक जव सर्वश्री हिलटॉप इंफ्राटेक, पार्टनर श्री शिव कुमार, पिता- स्म0 हीरालाल, साकिन- चौथा तल्ला, करनी हाईटस, क्लब रोड, रौंघी	पिता-श्री रविन्द्र पासवान, ग्राम- कटहल टोला, पो0+थाना- सोहराय, जिला- नालन्दा (बिहार) पति- श्री सतेन्द्र कु0 वर्मा, ग्राम0+पो0- राजगीर, थाना- राजगीर, जिला- नालन्दा (बिहार) ज्वदेमिततमक जव सर्वश्री हिलटॉप इंफ्राटेक, पार्टनर श्री शिव कुमार, पिता- स्म0 हीरालाल, साकिन- चौथा तल्ला, करनी हाईटस, क्लब रोड, रौंघी	Letter No.: 315/M Date: 31/03/2023	1.647	21.04.2023 से 05 वर्ष	NA	NA	NA	NA	21.04.2023 से 05 वर्ष	1.647	Letter No.: 315/M Date: 31/03/2023	मौजा- दोहोकातु थाना- रामगढ़ नं0 100, खाता नं0-26, 09, 36, 18, 16, 34 प्लॉट नं0-71, 73, 74, 72, 67, 39, 68, 38 Latitude - 23°33'13.80"N to 23°33'20.79"N Longitude - 85°31'25.14"E to 85°31'33.97"E	मौजा- दोहोकातु थाना- रामगढ़ नं0 100, खाता नं0-26, 09, 36, 18, 16, 34 प्लॉट नं0-71, 73, 74, 72, 67, 39, 68, 38 Latitude - 23°33'13.80"N to 23°33'20.79"N Longitude - 85°31'25.14"E to 85°31'33.97"E	Opencast			

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9	पत्थर	M/s Subhash Agarwal	Flat No. 4D, Radha Krishna Apartment, Katkuria, Dhanbad-826001	Letter No.: 631 Date: 21/03/2023	2.023	26.04.2023 से 10 वर्ष	NA	NA	NA	Working	Non-Captive	EC/SEIAA/2022- 23/2661/2022/307 dt 13 Feb 2022	मौजा- सोसो एवं जरियो, थाना- रजरप्पा खाला नं०-86 एवं 157 प्लॉट नं०-89 अंश एवं 708 अंश Latitude. N 23°34'26.90" to N 23°34' 31.96" Longitude. E 85°35' 25.24" to E 85°35' 30.27"	Opencas t
10	पत्थर		मे० न्यू इण्डिया इण्डस्ट्रीज, पार्टनर (1) मो० आबिद हुसैन पिता- नबीबक्श अंसारी, ग्रा०- गंधोनिया, पो०- बेको, थाना- बगोदर, जिला- गिरीडीह। (2) श्री शेखर मिश्रा, पिता- श्री स्व० महेन्द्र मिश्रा, ग्रा०- पत्थलडीहा, पो०- बरवाडीह, थाना- बगोदर, जिला- गिरीडीह।	Letter No.: 254/M Date: 15/03/2023	2.699	13.05.2023 से 05 वर्ष	NA	NA	NA	Working	Non-Captive	EC/SEIAA/2022- 23/2697/2022/396 dt 01 Feb 2023	मौजा- भईया सगातु एवं बम्हन सगातु, थाना- गोला नं० 66 खाला नं०- 17, 29, 44 एवं 9 प्लॉट नं०- 537 अंश, 532, 535, 41 अंश Latitude- 23°36'25.30" N to 23°36'30.70" N Longitude- 85°47'16.10" E to 85°47'26.10" E	Opencas t
11	पत्थर		मे० जी०बी० इन्टरप्राइजेज, पार्टनर(1) श्री नारायण बेदिया, पिता-श्री रामसय बेदिया, ग्रा०- दाडीदाग, पो- पाली, थाना- पतरातु, जिला- रामगढ़ (2) श्रीमती आशा रानी टेटे, पिता- श्री तेलेस्फोर किडो, ग्रा०- कण्ज.1207ए धुर्वा डैम साईट, जिला-रॉंची, (3) श्री अनिल कुमार गौतम, पिता-श्री रामचन्द्र बेदिया, ग्रा०- दाडीदाग, पो०-पाली, थाना- पतरातु, जिला- रामगढ़।	Letter No.: 388/M Date: 28/04/2023	1.214	26.07.2023 से 10 वर्ष	NA	NA	NA	Working	Non-Captive	EC/SEIAA/2022- 23/2757/2023/473 dt 24/03/2023	मौजा- दाडीदाग, थाना- पतरातु नं० 71, खाला नं०- 06, 13, 30, प्लॉट नं०- 80 अंश, 79, 81 अंश, 77 Latitude- 23°35'12.09" N to 23°35'19.71" N Longitude- 85°26'02.61" E to 85°26'09.25" E	Opencas t



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12	पत्थर	M/s Shiv Mining & Stone Crushers, पार्टनर (1) श्री चरेंद्र बेदिया, पिता- स्व0 शिवकरण बेदिया, ग्राम- लेम, पो0- हरिहरपुर, थाना- बासल, जिला-रामगढ़ (2) श्री बिनोद कुमार सिन्हा पिता- स्व0 रामबल्लव सहाय, ग्राम- न्यू कोलोनी बरही, थाना- बरही, जिला- हजारीबाग (3) श्री विकास कुमार सिन्हा, पिता- स्व0 रामबल्लव सहाय, प्लॉट नं0-जी-2, ग्राउंड फ्लोर, श्री पारस अपार्टमेंट, इमली चौक के पास, हरमु, राँची।	Letter No.: 270 Date: 20/03/2024	0.987	07.12.2023 से 05 वर्ष	NA	NA	Working	Non-Captive	EC/SEIAA/2023- 24/2876/2023/219 dt 14/08/2023	मौजा- बीचा, थाना- पतरातु सं0 37, खाता नं0- 77, 90, 88, प्लॉट नं0- 1136 अंश, 1137, 1138 अंश Latitude- 23°33'53.4794" N to 23°33'56.7255" N Longitude- 85°20'58.4530" E to 85°21'06.6642" E	Opencast
13	पत्थर	श्री ऋषि कंठस्थान एण्ड सत्याग्र, ग्राम- श्री छोटेलाल महता ग्राम- गोडातु, पो0- गण्डके, थाना- रजरप्पा, जिला-रामगढ़।	Letter No.: 1143/M Date: 06/11/2023	0.971	03.01.2024 से 10 वर्ष	NA	NA	Working	Non-Captive	EC/SEIAA/2022- 23/2692/2023/381 dt 31/01/2023	मौजा- चटाक, थाना- रजरप्पा नं0 136, खाता नं0-34, 61 प्लॉट नं0- 672, 669, 676, 677, 674, 673 एवं 678 23°31'35.09" N to 23°31'33.60" N Longitude- 85°35'0.96" E to 85°35'01.85" E	Opencast
14	पत्थर	श्री न्यू इण्डिया इण्डस्ट्रीज, पार्टनर (1) मो0 आबिद हुसैन पिता- नबीबकश अंसारी, ग्राम- गंधोनिया, पो0- बेको, थाना- बगोदर, जिला- गिरिडीह। (2) श्री शेखर मिश्रा, पिता- श्री स्व0 महेन्द्र मिश्रा, पिता- श्री स्व0 महेन्द्र मिश्रा, ग्राम- पत्थलडीहा, पो0- बरवाडीह, थाना- बगोदर, जिला- गिरिडीह।	Letter No.: 1185/M Date: 16/11/2023	2.812	03.01.2024 से 05 वर्ष	NA	NA	Working	Non-Captive	EC/SEIAA/2023- 24/2917/2023/288 dt 06/10/2023	मौजा- रोला, थाना- गोला नं0 64, खाता नं0- 13, 16, 23, प्लॉट नं0-617 अंश, 619 अंश, 633 अंश, 634, 638 अंश, 616, 615 अंश Latitude- 23°34'14.88" N to 23°34'22.18" N Longitude- 85°45'41.13" E to 85°45'49.15" E	Opencast



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15	पत्थर	मे0 मॉ तारा स्टोन माईन्स, पार्टनर (1) श्री हीरालाल मुण्डा, पिता- श्री कामेश्वर मुण्डा, ग्रा0- कोड़ी, पो0- पाली, थाना- पतरातु, जिला- रामगढ़। (2) श्री रोहन राम बेदिया, पिता- स्व0 लंगरा बेदिया ग्रा0- पाली, पो0- पाली, थाना-पतरातु, जिला- रामगढ़।	Letter No.: 104/M Date: 30/01/2024	1.21	17.02.2024 से 10 वर्ष	NA NA	NA NA	Working	Non-Captive	EC/SEIAA/2023-24/2949/2023/341 1 dt 02/11/2023	मौजा- कोड़ी, थाना- पतरातु नं0 61, खाता नं0- 25, प्लॉट नं0-790 अंश, 983 अंश, रकबा- 3.00 एकड़ रक्षणनकम्, 23°34'49.09" N to 23°34'55.48" N Longitude- 85°25'39.68" E to 85°25'45.44" E	Opencast
16	पत्थर	मे0 हनुमन्त लाल स्टोन माईन्स, पार्टनर (1) श्री कमल किशोर बेदिया, पिता- श्री गनौरी बेदिया, ग्रा0+पो0- पाली, थाना- पतरातु, जिला- रामगढ़। (2) श्री राम कृष्णा सिंह, पिता- श्री कामेश्वर नारायण सिंह, ग्रा0+पो0- पाली, थाना- पतरातु, जिला- रामगढ़।	Letter No.: 103/M Date: 30/01/2024	0.671	17.02.2024 से 10 वर्ष	NA NA	NA NA	Working	Non-Captive	EC/SEIAA/2023-24/2951/2023/362 dt 02/11/2023	मौजा- पाली, थाना- पतरातु नं0 64, खाता नं0- 10, 46 प्लॉट नं0- 39 अंश, 40 अंश, 41 अंश, 43 अंश, 44 अंश, 45 अंश, रकबा- 1.66 एकड़ Latitude- 23°37'07.01" N to 23°37'11.57" N Longitude- 85°22'54.96" E to 85°22'59.06" E	Opencast



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Table 9 Details of earlier running mining lease (Closed but Potential Area)

Sl. No.	Name of the Miner	Name of the Lessee	Address & Contact No. of Lessee	Mining lease Order No. & date	Area of Mining lease (ha)	Period of Mining lease (Initial)	Period of Mining lease (1st/2nd... renewal)	Date of commencement of Mining Operation	Status (Working / Non Working / Temp. Working for dispatch etc.)	Capable / In-Capable	Obtained EC (Yes/No), if Yes Letter No with date of grant of EC.	Location of the Mining lease (Latitude & Longitude)	Metho d of Mining (Open cast / Under ground)	Plot No	Mauza	Thana
1	पत्थर	श्री दिलीप कुमार घोष पिता- श्री डीएनए घोष	ग्राम- कैथा, रामगढ़	24.02.1982	17.25 एकड़							23°36'47.8" 85°31'51.8" 23°36'49" 85°32'10.5" 23°36'23.3" 85°32'9.7" 23°36'22.9" 85°31'58.8"		410 अंश, 436 अंश	मुरामकला,	रामगढ़
2	पत्थर	श्री सुरजमल, पिता- श्री रामप्रताप अग्रवाल	ग्राम- कुजू, रामगढ़		3.50 एकड़	21.04.1992	21.04.1992 से 10 वर्ष					23°39'31.6" 85°31'36.1" 23°39'14.7" 85°31'36.2" 23°39'14.8" 85°31'50.7" 23°39'31.8" 85°31'50.8"		310 अंश	रौता	माण्डु
4	पत्थर	श्री महेन्द्र प्रसाद, पिता- श्री ईश्वरी प्रसाद	ग्राम- जवाहर लाल नेहरू पथ, रामगढ़ कैट		6.06 एकड़	03.08.1982	03.08.1982 से 5 वर्ष								बनखेता	रामगढ़
5	पत्थर	सर्वश्री बिहार एलाय स्टील लि०	हाडले हाउस, द्वारा श्री पी०डी० डागा	06.09.1982	35.00 एकड़							23°38'57.65" 85°18'54.63" 23°39'1.33" 85°19'1.55" 23°39'4.59" 85°18'57.41" 23°38'59.03" 85°18'51.7"		26,31,28	बलकुदरा	रामगढ़
7	पत्थर	श्री निरोध तिवारी, पिता- श्री विक्रमा तिवारी,	ग्राम- रौंकी रोड, मरार, हजारीबाग	22.12.1982	62.34 एकड़									82, 85, 149, 3406, 557, 275	रामगढ़ एवं पंकी	माण्डु
8	पत्थर	श्री उल्लदल कुमार सरकार पिता- श्री सरत कुमार अग्रवाल	ग्राम- सुभाष मार्ग हजारीबाग	22.12.1982	9.15 एकड़							23°42'8.78" 85°32'34.86" 23°42'4.11" 85°32'34.74" 23°42'4.07" 85°32'39.65" 23°42'8.18" 85°32'39.36"		152, 815 अंश 3031	दिगवार	माण्डु
9	पत्थर	श्री रविन्द्रनाथ बनर्जी, पिता- श्री गंगाधर बनर्जी	ग्राम- रामगढ़	05.04.1983	4.90 एकड़							23°36'42.96" 85°31'49.67" 23°36'27.36" 85°31'53.57" 23°36'27.5" 85°32'10.76" 23°36'43.92" 85°32'9.56"		429 अंश 436 अंश	मुरककला,	रामगढ़
10	पत्थर	श्री असित बरण बनर्जी, पिता- श्री निरोध वरण बनर्जी	अस्पताल रोड, हजारीबाग	05.06.1983	36.00 एकड़							23°41'0.34" 85°32'52.63" 23°41'2.14" 85°33'16.19" 23°41'26.76" 85°33'8.16" 23°41'26.01" 85°32'49.08"		185, 815 अंश	दिगवार,	माण्डु,
11	पत्थर	श्री अशोक कुमार जैन, पिता- श्री मनसुख लाल जैन	ग्राम- आकार, हजारीबाग	14.06.1983	09.00 एकड़							23°50'34.3" 85°30'19.8" 23°49'58.4" 85°30'19.7" 23°50'2.8" 85°31'32.7" 23°50'35.8" 85°31'32.9"		2,89 अंश	पिण्डरा	माण्डु,

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25	पत्थर श्री द्वारिका प्रसाद, पिता - श्री विगन महतो	ग्राम- रामहुआ, पो- सोनडीमरा, थाना- गोला, हजारीबाग	26.06.1990	6.00 एकड़	23.08. 1991 से 10 वर्ष													कोराबे	गोला
26	पत्थर श्री अजय कुमार, पिता-श्री नन्दलाल	ग्रामगढ़ कैंट		3.16 एकड़	08.10. 1991 से 10 वर्ष													बड़कीपोना	रामगढ़
27	पत्थर श्री विजय कुमार सिन्हा, पिता- श्री आरकेंद्र प्रसाद	सिमेट्री रोड, हजारीबाग		5.00 एकड़	20.03. 1993 से 10 वर्ष													पिण्डरा	माण्डु
28	पत्थर श्री संजय कुमार, पिता-श्री नन्दलाल	ग्रामगढ़ कैंट		2.71 एकड़	16.01. 1993 से 10 वर्ष													डुडुवा	रामगढ़
29	पत्थर श्री राजेन्द्र प्र० सिंह, पिता-श्री ईश्वरी प्रसाद	इन्द्रपुरी, रातु रोड, रौंची		2.00 एकड़	10.02. 1994 से 10 वर्ष													बनखेता	रामगढ़
30	पत्थर श्री राजकुमार लोहिया, पिता- श्री पुरनमल लोहिया	ग्राम+पो+था- पतरातु, जिला-रामगढ़		2.00 एकड़	10.07. 1995 से 10 वर्ष													छत्तरमाण्डु	रामगढ़
31	पत्थर श्री विजय कुमार शुक्ला, पिता- श्री श्रिकेश शुक्ला	ग्राम+पो- बड़काचुम्मा, थाना- माण्डु जिला- रामगढ़		2.50 एकड़	12.10. 1996 से 10 वर्ष													डुडुवा	रामगढ़
32	पत्थर श्री हरिद्वार प्रसाद, पिता- श्री महादेव साव	ग्राम+पो- हाजसिंग मोड़, केदला पो- घाटोटांड, थाना- माण्डु जिला- रामगढ़		1.10 एकड़	24.02. 1997 से 10 वर्ष													बरतुआ	पतरातु
33	पत्थर श्री उपरॉव सिंह, पिता- स्व० राम सिंह	ग्राम+पो- पतरातु, जिला-रामगढ़		3.50 ए०	10.12. 1998 से 10 वर्ष													रसदा	पतरातु
34	पत्थर श्री शान्ता कुमार पिता- स्व० विष्णु दयाल राम	ग्राम- रसदा, पो- बलकुदरा, थाना- पतरातु		2.05 ए०	02.10. 2000 से 10 वर्ष													भुमई	गोला
35	पत्थर श्री रमन कुमार सिन्हा पिता- श्री कल्याण दयाल	ग्राम- पामल, हजारीबाग																	



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36	पत्थर	श्री पंकज प्रसाद तिवारी पिता- राजेन्द्र प्रसाद तिवारी	ग्राम- दुसाध टोला जिला- रामगढ़	5.60 ए०	29.03. 2001 से 10 वर्ष						23°34'9.31" 85°34'14.46" 23°34'5.03" 85°34'15.42" 23°34'5.47" 85°34'20.35" 23°34'10.9" 85°34'16.52"	184	लोलो	रामगढ़ नं० 102
37	पत्थर	श्री सुभाष सिंह, पिता- श्री रामलोचन सिंह	ग्राम+पो० छत्तरमाण्डु थाना+जिला- रामगढ़	3.30 ए०	26.03. 2001 से 10 वर्ष						23°36'37.181" 85°35'40.566" 23°36'38.68" 85°35'41.237" 23°36'37.827" 85°35'42.555" 23°36'36.535" 85°35'41.932"	190	छत्तरमाण्डु	रामगढ़ नं० 116
38	पत्थर	श्री प्रवीण कुमार, पिता- ठकुरी महतो	ग्राम+पो० कुजू, रामगढ़	1.80 ए०	30.03. 2001 से 10 वर्ष							178	बड़काचुम्बा	माण्डु नं० 132
39	पत्थर	मे० भवानी स्टोन,	पो० - श्री योगेन्द्र ओझा, पिता- श्री कान्त ओझा, गौषाला रोड, विकासनगर, रामगढ़	0.50 ए०	03.08. 2001 से 10 वर्ष						23°32'58.95" 85°32'40.34" 23°32'57.8" 85°32'44.35" 23°33'1.24" 85°32'45.8" 23°33'2.51" 85°32'42.27"	566 अंश	दोहाकालु,	रामगढ़ नं० 61
40	पत्थर	मे० सागर स्टोन,	पो० श्री सुनील कुमार, पिता- श्री राजेश्वर प्रसाद ग्राम बिजुलिया, रामगढ़	1.47 ए०	03.08. 2001 से 10 वर्ष						23°32'58.95" 85°32'40.34" 23°32'57.8" 85°32'44.35" 23°33'1.24" 85°32'45.8" 23°33'2.51" 85°32'42.27"	566 अंश	दोहाकालु,	रामगढ़ नं० 61
41	पत्थर	श्री रंजीत कुमार सिंह, पिता- श्री कोतवाल बिहारी सिंह	ग्राम-सोट, पो०- चितरपुर, थाना- रामगढ़, जिला- रामगढ़	3.00 ए०	19.03. 2001 से 10 वर्ष							275 अंश	दूर्गी,	रामगढ़ नं० 130
42	पत्थर	श्री कन्हैया सिंह, पिता-श्री रामनरेश सिंह	ग्राम+पो० - छत्तरमाण्डु थाना+जिला- रामगढ़	3.00 ए०	18.01. 2002 से 10 वर्ष						23°35'35.38" 85°34'42.78" 23°35'32.9" 85°34'46.64" 23°35'38.89" 85°34'50.66" 23°35'40.76" 85°34'44.56"	76 अंश	कुरुम	रामगढ़ नं० 113
43	पत्थर	श्री प्रवीण कुमार महतो, पिता-श्री फुलेखर महतो	ग्राम- चिकोर, पो० भवानीनगर थाना- पतरातु, जिला- रामगढ़	2.05 ए०	10.03. 2002 से 10 वर्ष						23°37'41.58" 85°23'20.03" 23°37'41.24" 85°23'19.76" 23°37'40.28" 85°23'20.99" 23°37'40.73" 85°23'21.42"	135	पाली	पतरातु नं० 64
44	पत्थर	श्री बालकृष्ण अग्रवाल, पिता-श्री रामवतार अग्रवाल	ग्राम- घुटुवा पो०- बरकाकाना, थाना- पतरातु जिला- रामगढ़	1.42 ए०	15.06. 2002 से 10 वर्ष						23°36'22.81" 85°28'32.29" 23°36'16.8" 85°28'36.69" 23°36'24.16" 85°28'44.42" 23°36'28.16" 85°28'38.93"	1001	तेलियातु	पतरातु नं० 76



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45	पत्थर श्री कैलाष महतो, पिता- श्री गंगेश्वर महतो	ग्राम-पो० बड़कीकुण्ड, थाना-जिला- रामगढ़	1.42 ए०	18.06. 2002 से 10 वर्ष															रामगढ़ नं० 117
46	पत्थर म० पवन स्टोन	ग्राम- सुश्री असरिता करकेटा, ग्राम- बनखेता, पो० बुटपालु, थाना- जिला- रामगढ़	1.59 ए०	18.06. 2002 से 10 वर्ष															रामगढ़ नं० 100
47	पत्थर म० जय मातादी स्टोन वर्क्स	ग्राम- विनोद कुमार सिंह, पिता- दूर्गा सिंह ग्राम- कुसुम्मा, पो० सोसो, थाना-जिला- रामगढ़	1.84 ए०	15.06. 2002 से 10 वर्ष															रामगढ़ नं० 132
48	पत्थर श्री दिलीप कुमार सिंह पिता-श्री शिवनन्दन सिंह	ग्राम-पो० छत्तरमाण्डु, थाना-जिला- रामगढ़	2.66 ए०	19.05. 2002 से 10 वर्ष															रामगढ़ नं० 132
49	पत्थर श्री बसंत कुमार पिता- श्री सुन्दर लाल साहु	ग्राम- रसदा, पो०- बलकुदरा, थाना- पतरातु, जिला-रामगढ़	1.632 ए०	08.07. 2002 से 10 वर्ष															पतरातु नं० 27
50	पत्थर म० पद्मावती मिनरल्स	पार्टनर (1) श्री सौरभ पाटनी, पिता- श्री कैलाष जैन, (2) श्री मो० अकबर पिता- श्री जमीन अहमद, ग्राम- मगनपुर, थाना- गोला, जिला- रामगढ़	1.05 ए०	21.08. 2002 से 10 वर्ष															गोला



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51	पत्थर	जेय माँ छिन्नमस्तिके	पार्टनर श्री संजय प्रसाद पिता- नन्दलाल मेहता, (2) श्री मुकेश कुमार गुप्ता, ग्राम-पो- कुजू जिन- रामगढ़	3.00 ए०	25.05. 2002 से 10 वर्ष						23°41'22.1" 85°27'2.6" 23°41'22.1" 85°27'13.7" 23°40'58.8" 85°27'18.4" 23°41'0.6" 85°27'4.2"	2403 अंश	बड़काचुम्बा,	माण्डु
52	पत्थर	श्री सुभाष अग्रवाल पिता- श्री पवन कुमार अग्रवाल	ग्राम- गोला रोड, रामगढ़ केन्ट, जिला- रामगढ़	3.00 ए०							23°34'46.98" 85°35'44.68" 23°34'48.4" 85°35'53.7" 23°34'36.51" 85°35'58.66" 23°34'34.72" 85°35'51.88"	1150	दुदुवा,	रामगढ़
53	पत्थर	श्री श्यामलाल महतो पिता- रेवालाल महतो	ग्राम- कोठार, पो० कैथा	2.70 ए०	05.10. 2002 से 10 वर्ष						23°36'0.43" 85°33'15.75" 23°35'56.46" 85°33'21.12" 23°36'0.04" 85°33'25.52" 23°36'3.93" 85°33'20.54"	1713	कोठार,	रामगढ़ नं० 88
54	पत्थर	श्री गौतम सिंह, पिता- श्री रमुन सिंह	ग्राम-पो० छत्तरमाण्डु, थाना-जिला-राम गढ़	3.00 ए०	29.01. 2003 से 10 वर्ष						23°37'35.95" 85°35'44.52" 23°37'26" 85°36'3.99" 23°37'32.83" 85°36'8.47" 23°37'42.07" 85°35'58.04"	1719 अंश	लोधमा,	रामगढ़ नं० 117
55	पत्थर	श्री राम प्रसाद पिता- श्री छतरू महतो	ग्राम-पो०- छत्तरमाण्डु, थाना-जिला- रामगढ़	2.50 ए०	29.01. 2003 से 10 वर्ष						23°37'35.95" 85°35'44.52" 23°37'26" 85°36'3.99" 23°37'32.83" 85°36'8.47" 23°37'42.07" 85°35'58.04"	1719 अंश	लोधमा,	रामगढ़ नं० 117
56	पत्थर	श्री अखिल कुमार माँझी पिता- श्री चुरका माँझी	ग्राम आरा, पो० - सारुबेड़ा थाना - माण्डु, जिला- रामगढ़	1.27 ए०	12.05. 2003 से 10 वर्ष						23°42'2.25" 85°34'54.62" 23°42'2.15" 85°35'5.82" 23°41'59.42" 85°35'6.24" 23°42'0.27" 85°34'54.11"	305, 406 अंश	हरवे,	माण्डु नं० 175
57	पत्थर	मे० कुमार मिनरल्स,	ग्राम- श्री दव कुमार सिंह, पिता- श्री महेंद्र प्रताप सिंह थाना चौक, रामगढ़ केन्ट	2.66 ए०	12.05. 2003 से 10 वर्ष						23°37'19.7" 85°25'50" 23°37'19.91" 85°25'52.9" 23°37'14.17" 85°25'52.99" 23°37'14.39" 85°25'49.11"	396 एवं 86,	हेहल	पतरातु नं० 58
58	पत्थर	मे० छिन्नमस्तिके स्टोन वर्क्स	पार्टनर श्री भुनेश्वर प्रसाद, पिता- श्री विष्णु महतो, ग्राम- सांडी, पो०- भरघनगर, थाना- माण्डु, जिला- रामगढ़	0.50 ए०	26.05. 2003 से 10 वर्ष						23°32'32.26" 85°31'45.43" 23°32'28.7" 85°31'43.68" 23°32'27.83" 85°31'46.51" 23°32'30.93" 85°31'47.98"	1207	दोहाकातु	रामगढ़ नं० 100



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59	पत्थर	श्रीमती कविता कुमार पति- श्री अगर कुमार चौधरी	ग्राम- सांडी, पो० - भरेजनगर, थाना- माण्डु जि०- रामगढ़	2.75 ए०	28.08. 2003 से 10 वर्ष																284	गोड़तु	रामगढ़ नं० 100
60	पत्थर	श्री विनय कुमार पिता- श्री भोला चौधरी	गोरियारीबाग, रामगढ़	1.29 ए०	28.08. 2003 से 10 वर्ष																687 अंश	मण्डके	रामगढ़ नं० 99
61	पत्थर	प्रेम सागर संथाली, पिता- श्री झरी मांझी,	ग्रा+पो० - कोराम्बे, थाना- गोला, जिला - रामगढ़	1.12 ए०	30.06. 2004 से 10 वर्ष																859 अंश	कोराम्बे	गोला
62	पत्थर	श्री पंकज कुमार सिंह पिता- श्री रामलोचन सिंह	ग्रा०+पो० - छत्तरमाण्डु थाना- जि० - रामगढ़	3.12 ए०	05.08. 2004 से 10 वर्ष																2402 अंश,	लोलो	रामगढ़ नं० 102
63	पत्थर	श्री शैलेश कुमार चौधरी पिता- श्री ब्रह्मदेव सिंह	ग्रा०- लावालौंग, पो० - कारये भाया चितरपुर जि० रामगढ़	3.12 ए०	05.08. 2004 से 10 वर्ष																2378 अंश	लोलो	रामगढ़ नं० 102
64	पत्थर	श्री शान्ता कुमार पिता- स्व० विष्णु दयाल राम	ग्राम- रसदा, पो०- बलकुदरा थाना- पतरातु, जि० रामगढ़	2.50 ए०	20.08. 2004 से 10 वर्ष																4	लवगा	पतरातु नं० 29
65	पत्थर	मो० गुलजार पिता- श्री खुल मियाँ,	ग्रा०+पो० - करमा, थाना- माण्डु, जिला- रामगढ़	2.39 ए०	22.02. 2004 से 10 वर्ष																475	छोछकीडुण्डी	माण्डु नं० 179
66	पत्थर	श्री सुरेन्द्र कुमार सिंह, पिता- स्व० अवधेष सिंह	ग्रा०+पो० बरकाकाना, थाना- पतरातु, जि०- रामगढ़	3.00 ए०	22.02. 2004 से 10 वर्ष																2392 अंश	लोलो	रामगढ़ नं० 102
67	पत्थर	श्री चन्द्रशेखर शर्मा, पिता- धरनीधर शर्मा	ग्रा०+पो०- बरकाकाना थाना- पतरातु, जि० रामगढ़	2.60 ए०	22.02. 2004 से 10 वर्ष																2392 अंश	लोलो	रामगढ़ नं० 102
68	पत्थर	श्री रंजीत कुमार बेसरा पिता- श्री गहन मांझी	ग्रा०+पो० पलानी थाना- पतरातु, जिला- रामगढ़	1.32 ए०	22.02. 2004 से 10 वर्ष																257 एवं 259	पलानी	पतरातु



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69	पत्थर	मेसर्स जगदम्बा स्टोन ई०	पार्टनर शैलेन्द्र कुमार मेहता एवं अन्य पिता-श्री युगल किशोर मेहता 12 ग्राम-पो-मेरु, थाना- मुफ्फसील जिला- हजारीबाग	13.42 ए०	22.02. 2004 से 10 वर्ष						1958 अंश, 1958 अंश, 1978 अंश	कुन्दरू खुर्द	रामगढ़
70	पत्थर	मे० स्वास्तिक इन्टरप्राइजेज	पार्टनर श्री राजेश प्रसाद एवं अन्य, ग्राम- ट्रान्सपोर्टनगर, कुचू थाना- माण्डु, जिला- रामगढ़	2.23 ए०	11.05. 2005 से 10 वर्ष						834	छोटाकाचुम्बा	माण्डु
71	पत्थर	श्री मुखेन्द्र महतो पिता-स्व० दाना महतो	ग्राम-पो- -छत्तरमाण्डु थाना-जि० - रामगढ़	3.03 ए०	23.11. 2005 से 10 वर्ष						2600 अंश	छत्तरमाण्डु	रामगढ़
72	पत्थर	श्री अशोक कुमार पोद्दार पिता- छित्तमल पोद्दार	ग्राम-पो- रामगढ़ थाना-जि० - रामगढ़	3.26 ए०	23.11. 2005 से 10 वर्ष						297, 270, 272	बनखेता,	रामगढ़
73	पत्थर	श्री दिलीप कुमार दागी, पिता- श्री धर्मदेव प्रसाद	ग्राम- चिकोर, पो- भदानीनगर, थाना- पतरातु, जिला-रामगढ़	0.77 ए०	17.05. 2008 से 5 वर्ष						134	पाली,	पतरातु, नं० 64
74	पत्थर	श्री सामन्त कुमार बेदिया पिता-श्री बृजकिशोर बेदिया	ग्राम- महुआ, टोला- लपंगा पो- भदानीनगर, थाना- पतरातु, जिला- रामगढ़	0.44 ए०	26.07. 2008 से 5 वर्ष						100	पाली	पतरातु
75	पत्थर	श्री ठाकुर दास महतो पिता-श्री बृजकिशोर बेदिया	ग्राम- महुआ, टोला- लपंगा पो- भदानीनगर, थाना- पतरातु, जिला-रामगढ़	5.00 ए०	10.10. 2008 से 10 वर्ष						171	सीरू,	रामगढ़



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76	पत्थर	श्री शलेन्द्र कुमार सिंह पिता- ब्रह्मदेव सिंह	ग्रा० - लावालोंग, पो०- कोरचे, थाना-जि०-	2.60 ए०	10.11. 2008 से 10 वर्ष								2392 अंश	लोला	रामगढ़
77	पत्थर	श्रीमति नीलम देवी पति- श्री सुनील कुमार	ग्रा०- डुरुमाडा, भुरकुण्डा रामगढ़	0.77 ए०	26.02. 2009 से 5 वर्ष								46 अंश	पाली,	पतरातु
78	पत्थर	श्री परमेश्वर प्रसाद महतो पिता- श्री सावन महतो	ग्रा०- खरखंड, पो०- तिरला था०- मुहल्ला टाँड्ड जिला- बोकारो वर्तमान-फनिकपु र, पो०- लारी, जिला-रामगढ़	1.00 ए०	26.02. 2009 से 10 वर्ष								560 अंश	दुडुआ	रामगढ़
79	पत्थर	श्री किशोर पासवन पिता- श्री अमृतलाल पासवान	ग्रा० - परसोतिया, कुम्हार टोली, बेसिक स्कूल के पास, थाना-जि० - रामगढ़	2.00 ए०	15.04. 2010 से 5 वर्ष								4.9 एवं 10 अंश	दारीदाग	पतरातु
80	पत्थर	श्री सुभाष अग्रवाल पिता- श्री पवन कुमासर अग्रवाल	ग्रा०- निम्मी, पो०- भदानीनगर, थाना- पतरातु, जि०- रामगढ़	5.00 ए०	15.04. 2010 से 5 वर्ष								869 एवं 157	सोसो एवं जरियो	रामगढ़
81	पत्थर	श्री रामफल बेदिया एवं अन्य पिता- श्री बिरू बेदिया	ग्रा० - निम्मी, पो० भदानीनगर, थाना- पतरातु, जि०- रामगढ़	2.83 ए०	28.08. 2010 से 5 वर्ष								8	कोडी	पतरातु
82	पत्थर	श्री चरेन्द्र बेदिया पिता- श्री शिवचरण बेदिया	ग्रा०- लेम, पो०- हरिहरपुर, थाना- बासल, जि० रामगढ़	1.30 ए०	28.08. 2010 से 10 वर्ष								10	लेम	बासल
83	पत्थर	श्री साहिद अनवर पिता- श्री अब्दुल हामिद	ग्राम-पो०- चितरपुर, थाना- जि०- रामगढ़	21.85 ए०	20.09.10 से 10 वर्ष								94	सुतरी	गोला



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95	पत्थर	श्री निषान्त आन्द पिता- श्री डी०एन० सिन्हा	श्री मे० मेन्टेकाला कस्ट्र०	जि०- पतरातु, जि०- रामगढ़	कृष्णा नगर, बुटी मोड़, राँची।	3.15 एकड़	12.05.11 से 5 वर्ष											1450, 1449, 564	दोहाकातु	रामगढ़
96	पत्थर	मेसर्स आस्था स्टोन सिन्हा	श्री मे० मेन्टेकाला कस्ट्र०	जि०- पतरातु, जि०- रामगढ़	पार्टनर श्री चित्ररंजन प्र० कुषवाहा पिता- श्री विजय शकर महतो ग्रा०- जोशिया, पो०- बन्दा, थाना- गोला, जि०- रामगढ़	5.96 ए०	24.05.11 से 5 वर्ष										705 एवं अन्य	कारी	गोला	
97	पत्थर	श्री मे० मेन्टेकाला कस्ट्र०	श्री मे० मेन्टेकाला कस्ट्र०	जि०- पतरातु, जि०- रामगढ़	अशोक नगर, राँची।	8.47 ए०	24.05.11 से 2 वर्ष										52 अंश, 79 एवं 80	घुटुआ	पतरातु	
98	पत्थर	मे० जगदम्बा स्टोन इण्ड	मे० जगदम्बा स्टोन इण्ड	जि०- पतरातु, जि०- रामगढ़	प्रा० नीलम देवी पति- श्री सुनील कुमार ग्रा०- डुरुमगढ़, भुरकुण्डा, रामगढ़।	2.80 ए०	27.06.11 से 5 वर्ष										53 अंश एवं 123	काड़ी	पतरातु	
99	पत्थर	श्री प्रेम सिंह पिता - श्री स्व० गोपाल सिंह	श्री प्रेम सिंह पिता - श्री स्व० गोपाल सिंह	जि०- पतरातु, जि०- रामगढ़	ग्रा०+पो०- गांधीनगर, थाना- पतरातु, जिला- रामगढ़	1.55 ए०	27.06.11 से 5 वर्ष										25 एवं 26,	पलानी	पतरातु	
100	पत्थर	श्री सत्येन्द्र कुमार पिता - श्री रमेश प्रसाद	श्री सत्येन्द्र कुमार पिता - श्री रमेश प्रसाद	जि०- पतरातु, जि०- रामगढ़	ग्रा०+पो० - कोराबे, थाना- गोला- जिला-रामगढ़	0.60 ए०	07.07.11 से 5 वर्ष										1541 अंश,	घाघरा	गोला	
101	पत्थर	श्री किशोर यादव पिता - स्व० पाण्डेय गोप	श्री किशोर यादव पिता - स्व० पाण्डेय गोप	जि०- पतरातु, जि०- रामगढ़	ग्रा०- मतकमा, पो०- भदानीनगर, थाना- पतरातु, जि०- रामगढ़	2.00 ए०	26.07.11 से 5 वर्ष										332 अंश,	लोआडीह	पतरातु	
102	पत्थर	मे० विलीप बिल्डकान लि०	मे० विलीप बिल्डकान लि०	जि०- पतरातु, जि०- रामगढ़	ग्रा०- बेरमो रोड, जैन मांड, बोकारो।	6.52 ए०	04.10. 2016 से 03.10.19										1970 अंश, 1758	कुन्दरुखुई,	रामगढ़	



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103	पत्थर	मे०जे०पी०एल० इन्स्ट्रुमेंट्स	पो०- श्री नीरज कु० सिंह, पिता-श्री जितेंद्र प्र० सिंह, ग्रा०- वी० 201, बैनन्दी अपार्टमेन्ट, सदाबहार	8.20 ए०	04.10. 2016 से 03.10.19					23°33'59.13" 85°24'19.12" 23°33'47.37" 85°24'17.69" 23°33'57.39" 85°24'30.82" 23°33'59.45" 85°24'26.23"	263 अंश,	लोआडीह,	पत्रातु
104	पत्थर	श्री दिलीप कुमार दागी, पिता-श्री धर्मदेव प्रसाद	ग्रा०- चिकोर, पो०- मदानीनगर, थाना- पत्रातु, जिला- रामगढ़	1.68 एकड	22.11. 2017 से 23.09. 2022					23°37'40.31" 85°23'19.56" 23°37'39.75" 85°23'20.55" 23°37'40.38" 85°23'21.12" 23°37'41.35" 85°23'19.87"	133 एवं 134	पाली,	पत्रातु, नं० 64

NOTE : Closed mines have the potential for minerals, so they will be re-auctioned for mining activities.



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Chapter -X Details of Royalty or Revenue received in last three years;

UNIT INR

Table 10 Royalty or Revenue received in last three years

Minor Mineral	2021-2022	2022-2023	2023-2024
Stone	2,61,68,601	3,19,04,388	3,21,64,000

Source: District Mining Office, Ramgarh





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Chapter – XI Details of Production of Minor Mineral (Stone) in last three years; (in CFT)

Table 11 of Production of Minor Mineral in last three years

Minor Mineral	2021-2022	2022-2023	2023-2024
Stone	4767900	2831400	5254000

Source: District Mining Office, Ramgarh

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Chapter - XII Mineral Map of the District;

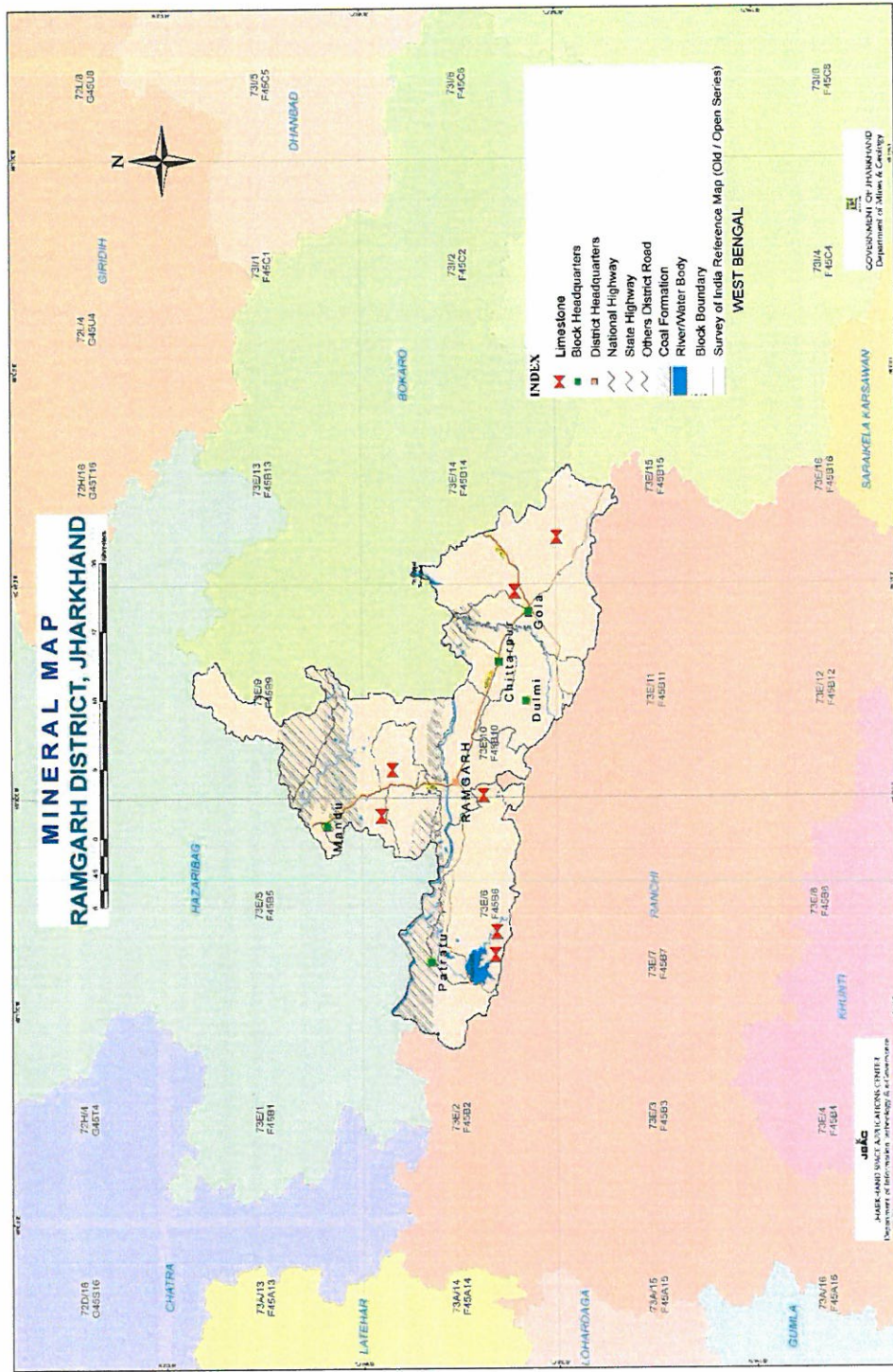


Figure 6 Mineral map of the district



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Ramgarh District Survey Report for Stone

Chapter - XIII List of Letter of Intent (LOI) Holders in the District along with its validity as per the following format

Table 12 Letter of Intent (LOI) Holders in the District

Sl. No	Name of the Mineral	Name of the Lessee	Address & Contact no of Letter of Intent Holder	Letter of Intent Grant Order No. & date	Area of Mining lease to be allotted (Ha.)	Validity of Lol	Use (Captive / Non - Captive)	Location of the Mining lease (Latitude & Longitude)
1.	Stone	मे० बिजीनी इन्टरप्राइजेज, पार्टनर (1) श्री सीताराम मुण्डा, पिता- स्व० जंगलु मुण्डा, ग्रा०- सुथरपुर, पो०- भदानीनगर, थाना- पतरातु, जिला- रामगढ़ । (2) श्रीमति सुमन कुमारी, पति- श्री अरूण कुमार मिश्रा, ग्रा०- 103 स्टेशन रोड, पतरातु, पो०+था०- पतरातु, जि०-रामगढ़ । (3) श्री जगदीश मुण्डा, पिता- स्व० कंचन मुण्डा, ग्रा०- लोआडीह, पो०- पाली, था०- पतरातु, जिला- रामगढ़	पार्टनर (1) श्री सीताराम मुण्डा, पिता- स्व० जंगलु मुण्डा, ग्रा०- सुथरपुर, पो०- भदानीनगर, थाना- पतरातु, जिला- रामगढ़ । (2) श्रीमति सुमन कुमारी, पति- श्री अरूण कुमार मिश्रा, ग्रा०- 103 स्टेशन रोड, पतरातु, पो०+था०- पतरातु, जि०-रामगढ़ । (3) श्री जगदीश मुण्डा, पिता- स्व० कंचन मुण्डा, ग्रा०- लोआडीह, पो०- पाली, था०- पतरातु, जिला- रामगढ़	Letter No.: 407 Date: 21/04/2023	2.727		Non-Captive	मौजा- लोआडीह, थाना- पतरातु नं० 68 खाता- 03, 09, प्लॉट- 331 अंश, 377 अंश, 380 अंश, 381, 382, 383, 388, 389, 390, 391, 392, 393 अंश Latitude: N23°33'50.69" N23°33'36.32" Longitude: E85°24'29.2" TO E85°24'13.14"
2.	Stone	मे० बिजीनी इन्टरप्राइजेज, पार्टनर (1) श्री सीताराम मुण्डा, पिता- स्व० जंगलु मुण्डा, ग्रा०- सुथरपुर, पो०- भदानीनगर, थाना- पतरातु, जिला- रामगढ़	पार्टनर (1) श्री सीताराम मुण्डा, पिता- स्व० जंगलु मुण्डा, ग्रा०- सुथरपुर, पो०- भदानीनगर, थाना- पतरातु, जिला- रामगढ़	Letter No.: 408 Date: 21/04/2023	1.919		Non-Captive	मौजा- लोवाडीह, थाना- पतरातु नं० 68, खाता- 03, 09, प्लॉट- 552 अंश, 567 अंश, 568 अंश, 571 अंश, 573 अंश, 569 अंश Latitude: N23°33'45.38" TO N23°33'30.51" Longitude: E85°24'36.55" TO E85°24'21.58"



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3.	Stone	<p>मं० मॉ छिन्मस्तिके स्टोन, प्रो०- श्री किस्टो प्रसाद यादव, पिता- स्व० हरदयाल यादव</p> <p>ग्रा०- लोधमा, पो०- छत्तरमाण्डु, था०-जिला- रामगढ़।</p>	<p>Letter No.: 84 Date: 28/01/2024</p>	0.566	Non-Captive	<p>मौजा- लोधमा थाना- रामगढ़ नं० 117</p> <p>खाता- 20 प्लॉट- 1692</p> <p>Latitude: N23°36'31.202" TO N23°36'30.123"</p> <p>Longitude: E85°35'11.488" TO E85°35'10.315"</p>
4.	Stone	<p>M/s Bir Birsa Munda Enterprises, पार्टनर (1) श्री नन्द किशोर मुण्डा, पिता- श्री सावना मुण्डा, ग्राम- कोड़ी, पो०- पाली, थाना- पतरातु, जिला-रामगढ़ (2) श्री खूट्ट सिंह भोगता, पिता- श्री पुषन गंझु, ग्राम- जुगरा, पो०- चेपकला, थाना- बड़कागाँव, जिला- हजारीबाग (3) श्री आशा रानी टेदे, पति- तेलोस्कर किंडो, ग्रा०- डी०टी० 1207, डेम साईड, पो०- धुर्वा, थाना- धुर्वा, जिला- राँची</p>	<p>Letter No.: 858 Date: 11/08/2023</p>	1.61	Non-Captive	<p>मौजा- कोठार थाना- पतरातु नं० 61 खाता नं०- 6, 12, 33 प्लॉट- 113 अंश, 114, 115, 116, 165 अंश, 164 अंश, 166 अंश, रकवा- 4.00 एकड़</p> <p>Latitude: 23°35'29.37" TO 23°35'32.45"</p> <p>Longitude: 85°25'28.97" TO 85°25'32.52"</p>
5.	Stone	<p>श्री श्यामलाल महतो, पिता- श्री रेवालाल महतो, ग्रा०- कोठार, पो०- कैथा, थाना-जिला- रामगढ़</p>	<p>Letter No.: 1206 Date: 25/11/2023</p>	0.67	Non-Captive	<p>मौजा- कोठार थाना- रामगढ़ नं० 88, खाता नं०- 19, 38 प्लॉट- 1721, 1728 रकवा- 1.68 एकड़</p> <p>Latitude: 23°35'57.16" TO 23°36'1.19"</p>



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8.	Stone	मे० सत्येन्द्र कुमार सिंह, ग्रा०- टोंगरीटोला, न्यू साई मन्दिर, पावर स्टेशन रोड, रातु, थाना- रातु, जिला राँची - 835222 (E Auction)	Letter No.: 850 Date: 24/04/2023	2.50 acre	Non- Captive	लोधमा स्टोन ब्लॉक मौजा- लोधमा, थाना- रामगढ़, खाला- 111 के प्लॉट सं०- 1719 अंश N23°36'28.991" to N23°36'29.588" E85°35'11.2" to E85°35'11.879"
9.	Stone	M/s Adivashi Development Enterprises, पार्टनर श्री झालू बेदिया, पिता- स्व० जोगा बेदिया, ग्राम- कोड़ी, पो०- पाली, थाना- पतरातु, जि० रामगढ़ एवं अन्य	Letter No.: 47 Date: 18/01/2024	5.00 acre	Non- Captive	मौजा- कोड़ी थाना- पतरातु खाला- 8,12,23,33,37,38 के प्लॉट सं०- 141 (P), 126(P), 120, 121(P), 122(P), 123(P), 155(P), 149(P), 124(P), 125 23°35'23.83" to 23°35'37.17" 85°25'15.61" to 85°25'31.84"



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Table 13 लघु खनिज के खनन पट्टा हेतु प्राप्त आवेदनों की सूची

क्र०	पट्टेधारी का नाम एवं पता	पट्टा क्षेत्र का विवरण	खनिज	Limiting Coordinates
1	M/s Vimala Hilari Corporation. प्रा०- श्री राम विलास करमाली पिता- श्री रामफल करमाली, प्रा०- सौदा बस्ती, पो०- सौदा डी०, थाना- पतरातु, जिला- रामगढ़।	मौजा- सुथरपुर, थाना- पतरातु नं० 38 खाता- 62, 64, 65 प्लॉट- 312, 313, 290, 288 अंश, 286 रकबा- 6.81 एकड़	पत्थर	N23°34'41.62" to N23°34'54.05" E85°21'59.85" to E85°22'15.3"
2	श्री द्वारिका कुमार दास, पिता- श्री बालचन्द्र राम, प्रा०- H-62, लादी अपर टोला, पो०- भुरकुण्डा, था०- पतरातु, जिला- रामगढ़।	मौजा- लोवाडीह थाना- पतरातु नं० 68 खाता- 05, 01, 12, प्लॉट- 269, 270, 271, 272, 273, 274 एवं 275 अंश रकबा- 3.46½ एकड़	पत्थर	N23°33'50.25" to N23°33'59.59" E85°24'6.52" to E85°24'19.93"
3	शे० मॉ कंस्ट्रक्शन, प्रा० श्री अभिषेक कुमार, प्रा०- रामेश्वरम वाटिका एन०एच० 33, पो०- भरेचनगर, था०- माण्डु, जिला- रामगढ़।	मौजा- रोला, थाना- गोला नं० 64, खाता- 20, प्लॉट- 163, 164, 165, रकबा- 2.05 एकड़	पत्थर	23°34'45.39" to 23°34'51.13" 85°45'56.62" to 85°46'2.38"
4	मो० खुशीद आलम, पिता- खलील मियाँ, ग्राम+पो०- रसाईसा धमना, थाना- बरही, जिला- हजारीबाग।	मौजा- घाघरा थाना- पतरातु नं० 50 खाता- 08, प्लॉट- 293 रकबा- 2.00 एकड़	पत्थर	N23°35'33.94" to N23°35'43.45" E85°21'58.88" to E85°22'10.69"
5	M/s Johar Jharkhand Enterprises, पार्टनर- (1) श्री सीताराम मुण्डा, पिता- श्री जंगलु मुण्डा, ग्राम- सुथरपुर, पो०- भदानीनगर थाना- पतरातु, जि०- रामगढ़ (2) श्री शिव बेदिया, पिता- श्री फौदा बेदिया ग्राम- बीचा, पो०- भदानीनगर थाना- पतरातु, जि०- रामगढ़	मौजा- बीचा थाना- पतरातु नं० 37 खाता नं०- 72, 77, 79, 85, 86 प्लॉट- 1135 अंश, 1136 अंश, 1171 अंश, 1172 अंश, 1175 अंश रकबा- 5.15 एकड़	पत्थर	23°33'47.05" to 23°33'57.17" 85°20'56.79" to 85°21'13.79"



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6	(3) श्री दुलाल बेदिया, पिता- श्री गणेश बेदिया, ग्राम- जोभिया, थाना- गोला, जिला- रामगढ़ M/s Jharkhandi Ekta Pragiti Enterprises , पार्टनर- (1) श्री जुगेश्वर बेदिया, पिता- श्री सुखलाल बेदिया, ग्राम- कडरू, पो0- पाली, थाना- पतरातु, जि0- रामगढ़ (2) श्री राजेन्द्र बेदिया, पिता- श्री शीतल बेदिया, ग्राम- कडरू, पो0- पाली, थाना- पतरातु, जि0- रामगढ़ (3) श्री सीताराम मुण्डा, पिता- श्री जंगलु मुण्डा, ग्राम- सुथरपुर, पो0- भदानीनगर थाना- पतरातु, जि0- रामगढ़	मौजा- कडरू, थाना- पतरातु नं0 72, खाता नं0- 04, 13, 32, 47, 49, 50 प्लॉट- 809 अंश, 810 अंश, 812 अंश, 813 अंश, 814 अंश, 815, 816 अंश, 817 अंश, 818 अंश, 819 अंश, 827 अंश, रकबा- 5.00 एकड़	पत्थर	23°34'9.83" to 23°34'22.01" 85°27'36.77" to 85°27'50.75"
7	M/s Jharkhand Adivishi Vikash Enterprises. , पार्टनर- (1) श्री मंगेश बेदिया पिता श्री कंचन बेदिया, ग्राम- कडरू, पो0- पाली, थाना- पतरातु, जि0- रामगढ़ (2) श्री प्रेम प्रकाश लकड़ा पिता स्व0 कच्छु उरॉव, ग्राम- बेजवाली, पो0- भटखीजरी, थाना+जिला- लोहरदगा (3) श्री धनंजय मुण्डा पिता श्री जगरनाथ मुण्डा, ग्राम- कडरू, पो0- पाली, थाना- पतरातु, जि0- रामगढ़	मौजा- कडरू, थाना- पतरातु नं0 72, खाता नं0- 09, 15, 18, 23, 43 प्लॉट- 791 अंश, 792 अंश, 793 अंश, 794 अंश, 795 अंश, 799 अंश, रकबा- 4.75 एकड़	पत्थर	N23°34'13.23" to N23°34'15.5" E85°27'55.13" to E85°28'3.21"
8	मे0 जय मँ काली क्रेशर उद्योग , प्रो0- श्रीमति गीता कुमारी पति श्री कैलास कुमार, ग्राम- ऑफिसर्स कॉलोनी, रीभर साईड, भुरकुण्डा, दुन्दुआ, थाना- पतरातु, जिला- रामगढ़	मौजा- लोधमा, थाना- रामगढ़ नं0 117 खाता नं0- 18 प्लॉट- 1691 रकबा- 1.82 एकड़	पत्थर	23°37'34.67" to 23°37'40.78" 85°35'54.79" 85°36'0.8"
9	Johar Enterprises	मौजा-सुथरपुर, थाना नं. - 38, खाता नंबर- 61, प्लॉट नंबर- 285, 327, रकबा- 5.25 एकड़	पत्थर	23°34'31.66" to 23°34'49.66" 85°22'0.29" to 85°22'15.97"



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10	Parnami Enterprises	मौजा-सुथरपुर, थाना नं. - 38, खाता नंबर- 78, 72, प्लॉट नंबर- 1266, 1270, 1378, 1379, 1377 रकबा- 6.10 एकड़	पत्थर	23°34'7.26" to 23°34'15.47" 85°22'40.15" to 85°22'52.74"
11	Parnami Enterprises	मौजा-लोआडीह, थाना नं. - 68, खाता नंबर - 9,10,12 प्लॉट नंबर - 563, 564, 566 रकबा - 2.81 एकड़	पत्थर	23°33'31.26" to 23°33'39.83" 85°24'23.25" to 85°24'31.63"
12	Jay Jharkhand Mining Enterprises	मौजा-सुथरपुर, थाना नं. - 38, खाता नंबर - 73 प्लॉट नंबर - 1369, 1371, 1373, 1375, 1377, 1374, 1376 रकबा - 5.00 एकड़	पत्थर	23°34'5.33" to 23°34'16.55" 85°22'46.95" to 85°23'0.97"

Note - Any other area which may be found feasible for stone mining shall be included in the DSR prospectively.



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Table -13 Potential Resource Area proposed by Assisstant Director (Geology), Hazaribagh

Sl. No.	Name of Stone Block	Mauza	Block	Limiting Coordinates
1.	Sosokalan General Stone Block	Sosokalan	Gola	23°34'17.40" N to 23°34'27.10" N 85°35'37.70" E to 85°35'46.50" E
2.	Korambe General Stone Block	Korambe	Gola	23°28'50.68" N to 23°29'01.85" N 85°45'19.19" E to 85°45'26.87" E
3.	Maglidih General Stone Block	Maglidih / Jangi	Gola	23°33'58.00" N to 23°34'06.00" N 85°45'24.00" E to 85°45'32.00" E
4.	Beyang General Stone Block	Beyang	Dulmi	23°28'58.62" N to 23°29'05.49" N 85°38'54.76" E to 85°39'01.96" E
5.	Jario General Stone Block	Jario	Dulmi	23°34'28.01" N to 23°34'32.94" N 85°35'37.53" E to 85°35'43.89" E
6.	Soso General Stone Block	Soso	Dulmi	23°34'11.19" N to 23°34'14.37" N 85°35'36.96" E to 85°35'40.56" E
7.	Dhutuwa General Stone Block	Dhutuwa	Dulmi	23°34'35.36" N to 23°34'47.66" N 85°35'45.06" E to 85°35'54.97" E

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Ramgarh District Survey Report for Stone

Chapter - XIV Total Mineral Reserve available in the District;
On the basic of Approved Mining Plan;

Particulars	Total Available Resource (Tonne)
Closed but Potential Area	61648
	880595
	20126
	144257
Operational Mine	1805850
	756627
	707117
	840000
	2346750
	107000
	1997547.58
	403612
	583712
	706317.875
	938574
	304950
	325144
	1312740
378039	
155344	
LOI Holder	1693351
	2550291
Total	19019592.5

NOTE : This will be update at the time of preparation of Mining Plan for each proposed block or upcoming stone blocks.

Assumption that the active mining area would be 30% of the zone area & depth of ground water table as 6m (average).

Then the resource has been estimated on these two assumptions is 2,68,75,62,000 cum.



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Ramgarh District Survey Report for Stone

Chapter - XV Quality /Grade of Mineral available in the District;

Table 14 Quality /Grade of Mineral available in the District

Mineral	Quality / Grade
Sand	Medium Size Sand
Stone	Granite/Gneiss Rock
Soil	Silty Clay



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Ramgarh District Survey Report for Stone

Chapter – XVI Use of Mineral;

Stone mined from stone projects have multiple uses.

They include;

- ✓ Road Construction
- ✓ Building Construction
- ✓ Water Resource Projects including Dams, Embankment, Flood Protection Structures, etc.
- ✓ Slope Stability Structures
- ✓ Construction of Airports Runway
- ✓ Railway Tracks Stability
- ✓ Bridge Construction



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Ramgarh District Survey Report for Stone

Chapter – XVII Demand and Supply of the Mineral in the last three years (cft);

Table 14 Below shows quantity of stone produced (in CFT) in the district during last three years

Minor Mineral	2021-2022	2022-2023	2023-2024
Stone	4767900	2831400	5254000

Source: District Mining Office, Ramgarh

Predicted growth in infrastructure sector is 8.2 % (source - Invest India) keeping this figure in view estimated demand for Building stone in next 05 years are given below: -

2024 - 2025: 5684828

2025- 2026: 6150983

2026-2027: 6655363

2027-2028: 7201102

2028-2029: 7791592



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Ramgarh District Survey Report for Stone

Chapter - XVIII Mining leases marked on the map of the district;

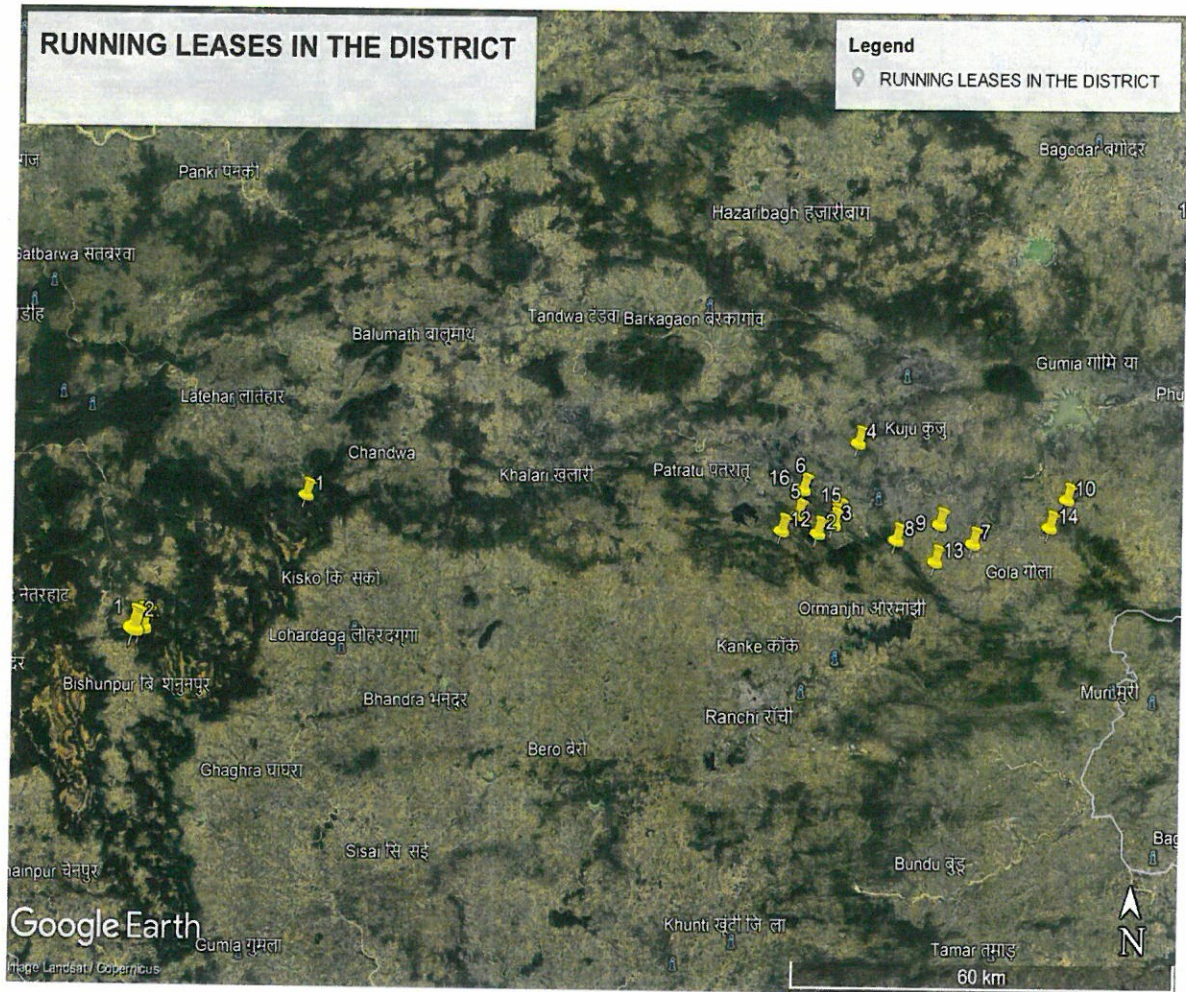


Figure 7 Running Mining Leases



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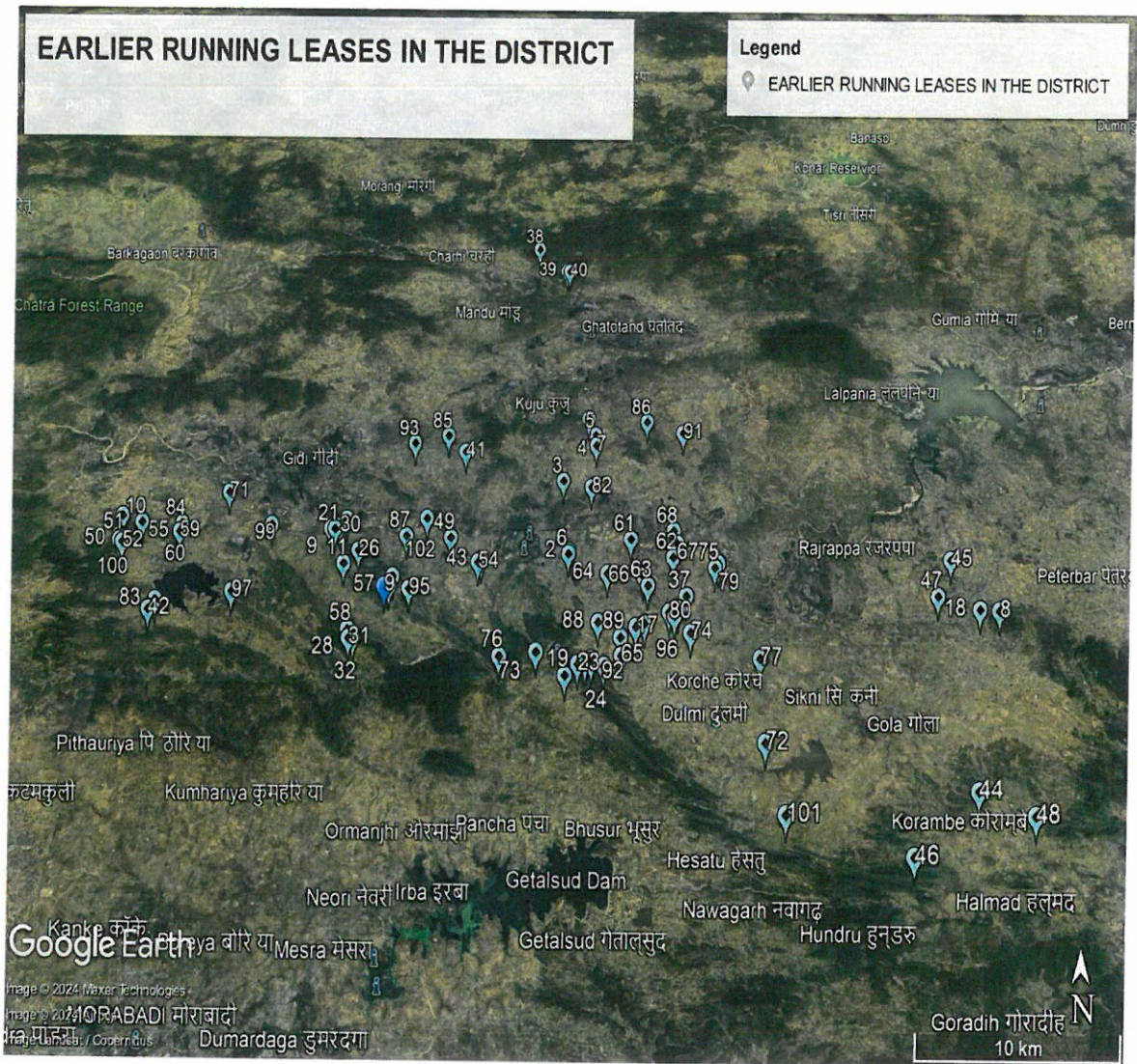


Figure 8 Earlier Running Mining Leases



AS

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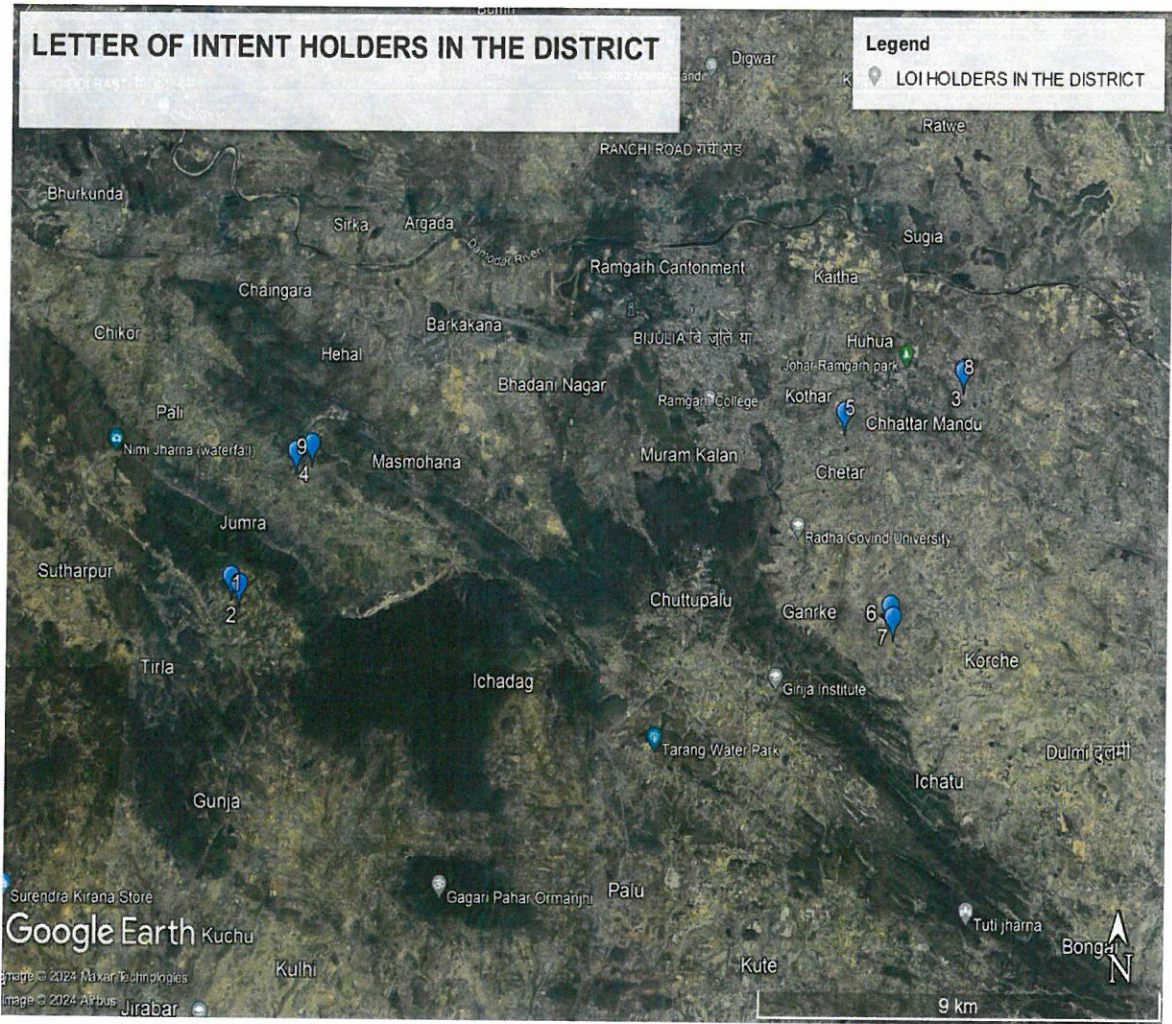


Figure 9 Letter of Intent (LOI) Holders



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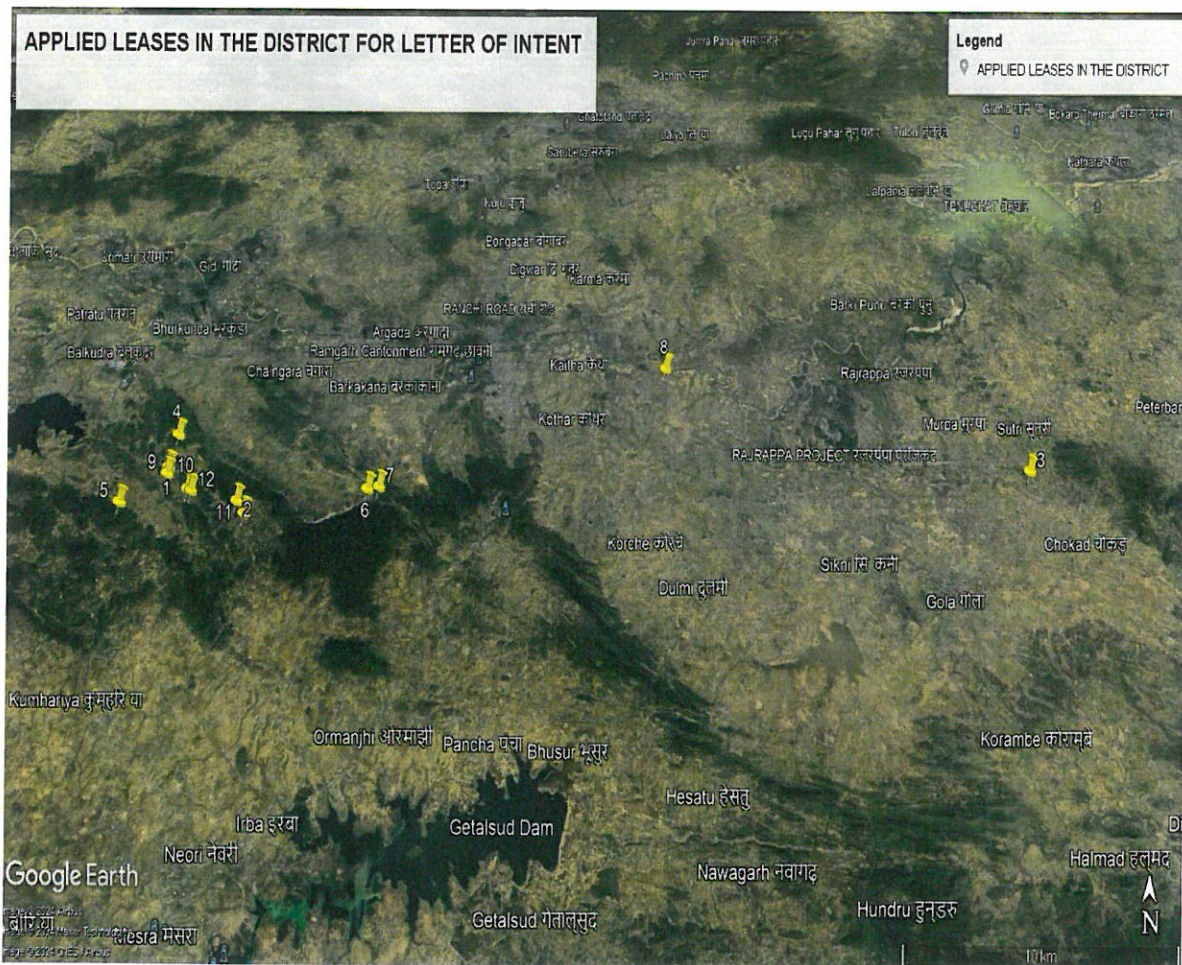


Figure 10 Applied leases in the District for Letter of Intent (LOI)



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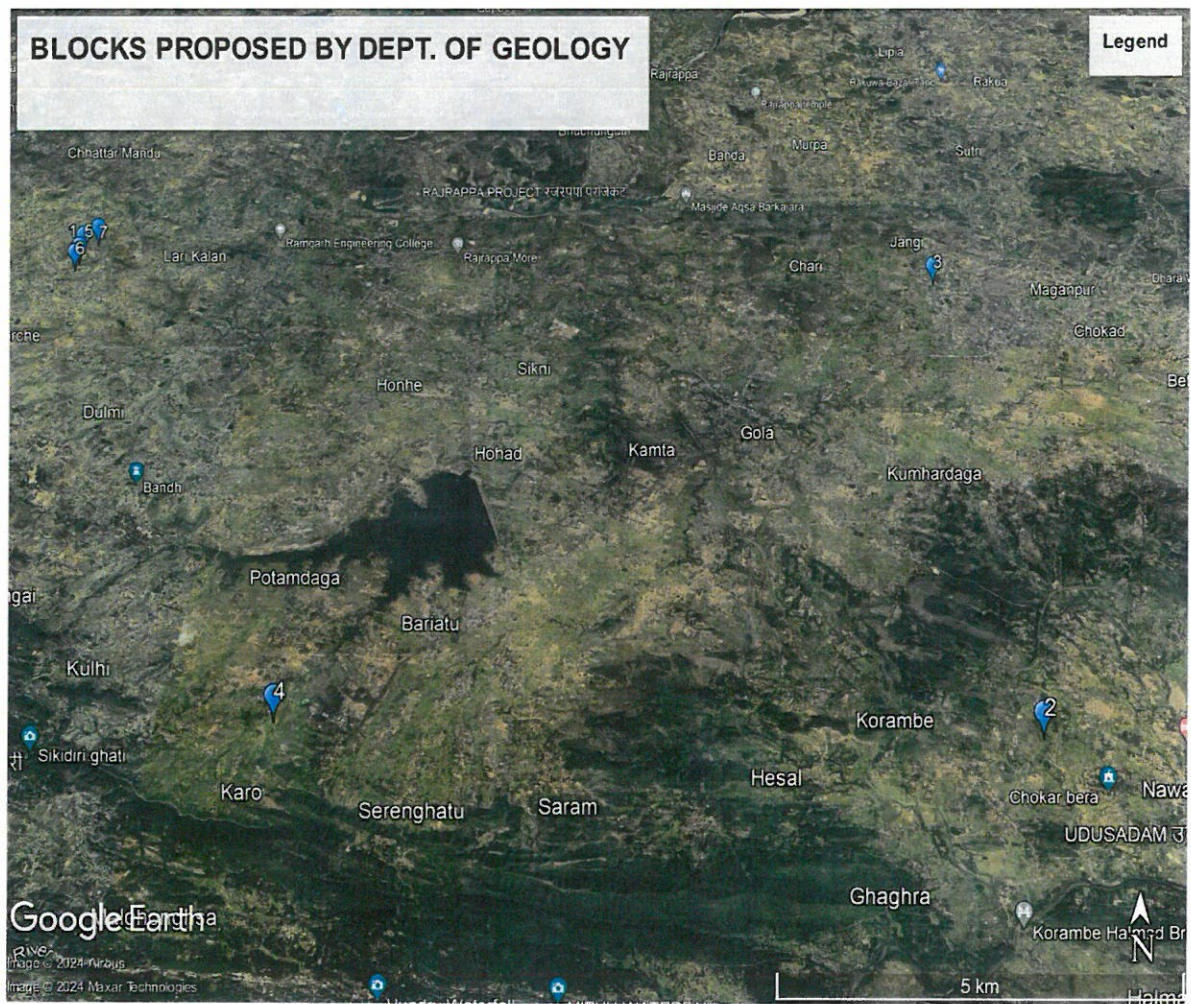


Figure 11 Block Proposed by Geological Department



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Ramgarh District Survey Report for Stone

Chapter - XIX Details of the area of where there is a cluster of mining leases viz. number of mining leases, location (latitude and longitude);

Currently, there is no cluster situation among the running mining leases and Letters of Intent (LOIs) holders. However, the District Mining Officer will declare a cluster of mining leases before granting Environmental Clearance.



Ramgarh District Survey Report for Stone

Chapter – XX Details of Eco-Sensitive Area, if any, in the District;
Eco-Sensitive Zones notified by Ministry of Environment, Forest and Climate Change in Jharkhand are listed below;

1. Dalma Wildlife Sanctuary
2. Hazaribagh Wildlife Sanctuary
3. Betla National Park
4. Palamau Wildlife Sanctuary
5. Mahuadanr Wolf Sanctuary
6. Udwa Lake Bird Sanctuary
7. Gauatam Buddha Sanctuary
8. Palkot Wildlife Sanctuary
9. Parasnath & Topchanachi Sanctuary
10. Koderma Wildlife Sanctuary
11. Lawalong Wildlife Sanctuary

No eco-sensitive area in the district as per Ministry of Environment, Forest and Climate Change.

Source : <https://moef.gov.in/moef/rules-and-regulations/esz-notifications/index.html>



Ramgarh District Survey Report for Stone

Chapter – XXI Impact on the Environment (Air, Water, Noise, Soil, Flora & Fauna, land use, agriculture, forest etc.) due to mining activity;

Project activities relating to stone mining projects result into impact on various environmental attributes including land, soil, ambient air, water quality, noise, bio-environment including flora & fauna & socio-economic profile in the area. For stone mining project to be sustainable, on long term basis, these impacts need to be assessed & be mitigated. Extent of impact on environmental attributes in a project would depend on base line environmental quality profile & planned capacity of the mine, method of mining etc. This being so, project environmental impact specific to every project needs to be assessed for their proper mitigation. In this section of the Report effort has been made to identify environmental impacts due to project related activities & suggest a framework for mitigation measures to minimise their impact.

Project specific impact would be assessed detailed mining plan is prepared.

21.1 Activities Likely to affect Ambient Air Quality

21.1.1 Site Preparation

In most of cases first project activity is site preparation which involves clearing the site of vegetation including shrubs, trees etc, grading & levelling the site. These activities generate dust & noxious gases on account of use of diesel for operating diesel generated earth moving equipment and haulage vehicles.

21.1.2 Removal of Overburden

In case there is overburden in form of soil or weathered stone, over the stone deposit, it needs to be removed before mining of stone activity are initiated. In such cases where overburden is soft material, it would be removed by grader without blasting. But if O.B is hard, it would require blasting with use of explosives. Removal of O.B & its transportation & storage would generate dust & noxious gases.

21.1.3 Mining of Stone & its Handling

After OB is removed, activities relating to mining of stone are initiated. This involves drilling blast holes using drill, blasting using explosives, loading blasted material on tippers and transport them to stockyard or crushing cum screening unit. Most of mining and haulage equipment are diesel based. As such stone mining activities & transportation generate dust and noxious gases.

21.1.4 Crushing & Screening

In stone cases crushing & screening plants are located within lease area and in other cases they are located outside lease area. Crushing and screening activities are also source for generation of dust and noxious gases.

Summaries activity wise source of air pollutants are given below in Table;



Ramgarh District Survey Report for Stone

Air Environment

Sl. No.	Particular	Activity	Pollutant	Impact
1.	O.B. Removal A. If soft O.B.	Removal by using HEMM	Dust Noxious Gases	Rise in Level of air pollution & Rise in level of particulate Matters
2.	B. Hard Material	1. Drilling Blast holes 2. Blasting	Dust Noxious Gases	
3.	O.B. transport by Road to Dump yard	OB Handling	Dust Noxious Gases	
4. 4.1.	Mining of stone	Drilling Blast Holes	Dust Noxious Gases	Properly designed geometry of Blast holes
4.2.	Blasting	Blasting	Dust Noxious Gases	
4.3	Handling of Run of Mine store		Dust Noxious Gases	
4.4	Loading Blasted Material on Tippers	Loading Material on Tippers	Dust Noxious Gases	
4.5	Transport of Blast Material to crusher cum screening plant	Transport by Tipper	Dust Noxious Gases	
5.	Sizing of ROM stone	Crushing Screening	Dust Noxious Gases	Rise in level of particulate Matter in Ambient Air



Ramgarh District Survey Report for Stone

Anticipated Environment Impact on Air Environment

Proposed mining of stone by opencast method, their handling i.e., crushing, screening & transportation finished product will result into impact on environmental attributes in the area. Anticipated impact would be on land, ambient air, water, noise level & soil.

However, assessment of these anticipated impact at this stage is constrained by the fact that capacity of individual mine in identified lease is not available.

In this scenario an attempt has been made to identify likely sources of environment pollution & their impact is a typical opencast stone mine.

Activity wise sources of the dust generation & their emission factor are tabulated below:

Emission Factor have been taken from AP42 & IPA;

Sl. No.	Activity	Emission Factor
1	Drilling	0.11 Kg/Hole
2	Blasting	0.52 Kg/Blast
3	Loading	$1.4 \times 10^{-0.4}$ Kg/t
4	Transportation	0.4 kg/VKT
5	Crushing	0.056 Kg/t

Anticipated impact on ambient air quality in study area need to be calculated using Air Modelling software and emission factor given above in table.

Impact of above activities on ambient air quality will mostly be confined to release of particulate matter. SO₂ & NO_x due to use of diesel for haulage vehicles & mining equipment's be following expression;

$$\text{Emission rate of SO}_2 \text{ (gm/day)} = Q \times C / 100 \times M_w / E_w$$

Where;

Q = Fuel use per hour (Litre)

C = Concentration of Pollutant Fuel percent (%) Sulphur

M_w = Molecular weight of emitted pollutant (Kg/Kg-mol)

E_w = Elemental weight of emitted pollutant in fuel (Kg/Kg-mol)



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Ambient Air Quality in the District

	PM10	PM2.5	NO2	SO2
	89.50	49.50	37.00	17.10
	80.30	49.60	20.70	28.80
	70.50	39.10	15.40	21.50
	71.55	38.60	14.50	22.06
	73.90	42.10	16.40	25.40
	88.12	59.12	25.55	10.22
	56.00	31.00	23.60	5.90
	61.00	34.00	25.90	8.80
	59.00	29.00	17.30	5.90
	87.30	52.10	36.20	14.20
	94.80	53.40	38.30	17.10
	87.30	48.60	40.20	15.70
	90.30	53.10	14.80	42.60
Source : Ambient Air Quality Data from JSPCB				
Average	77.66	44.56	25.07	18.10

21.2 Impact on Water Environment

In most of cases of opencast mines for stone there is no generation of effluent.-

Quarrying are not likely to intersect ground water table. As such there is no seepage of groundwater into quarry.

However, sewage is generated from washroom provided in office and rest shelter.

Run-Off from active mining zone surface run-off from active mining zone also contain high suspended solid.

However, sources of generation of polluted water will include;

water collected in quarry during monsoon will be pumped out to facilitate mining this water make contain suspended solid. Discharge of pump out water to natural water body will degrade quality of water or choke the natural water courses. Water pollutants are not chemical or biological run-off from external over burden dump. Surface run-off generated from external dumps are likely to contain high amount of suspended solid.



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Ramgarh District Survey Report for Stone

Summaries sources of generation of waste in a typical stone mine;

Water Environment

Sl. No.	Particular	Activity	Pollutant	Impact
1.	Mining of stone by opencast method of mining	Collection of rain water in Quarry Collection of surface water flowing into quarry	Suspended solid	High level of suspended solid in water
2.	Mining of stone by opencast method	Provision of wash rooms	Generation of sewage having high level of BOD & other pollutants	Discharge of sewage untreated impact quality of surface & ground water
3.	Mining of stone by opencast method & allied activities	Surface Run-off from lease area during rainy season from external waste dumps	Generation of surface Run-off with high level of suspended solid & flowing to surface water source near lease area	Quality of surface deterioration of water

21.3 Impact on Noise Environment

Operation of mining equipment and haulage of stone by road are major source for noise generation in stone mine.

21.4 Impact due to Vibration

The unplanned blasting may cause ground vibration outside the lease area that may affect stability of structures located in close vicinity.



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21.5 Impact on Landuse

Mining and other project activities lead to change in land use pattern in project area. This may lead to loss of vegetative cover or forest if present, in the project area. Change in land use also alter topography and drainage pattern in project area.

21.6 Impact on Agriculture Land

Care has been taken to identify potential site for mining projects avoiding forest land and agriculture land particularly prime agriculture land (Dhan 1 & Dhan 2). As such anticipated impact on agricultural land will be minimal.

21.7 Impact of Road Transportation

Run-of-Mine stone boulders are to be transported to crushing-cum-screening plant for crushing and screening to required size as per market demand. Crusher plant may be located within the lease area or beyond the lease area.

Crushed and Screened stone product are to be transported to the consumers by road / rail.

Mining operations often require the use of heavy trucks and machinery, leading to increased traffic on local roads. The continuous movement of these heavy vehicles can cause congestion, especially on narrow or poorly maintained roads. This can also result in cracks, and other forms of road damage

21.8 Impact on Soil Environment

Mining and allied project activities have impact on soil environment in study are particularly project area. Such impacts are briefed below;

Loss of Topsoil

If topsoil are not removed before mining operation, they are mixed with overburden material and fertile soil is lost.

Impact on Soil Structure

Movement of heavy equipment on soil changes the soil structure including specific gravity, porosity and permeability. Such changes affects productivity of soil.

There are instances of soil contamination on account of leakage of oil & grease from mining equipment.

21.9 Impact on Flora & Fauna

Project activities associated with stone mining have impact on environment attributes i.e. ambient air, noise, ground vibration, water & land.



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Ramgarh District Survey Report for Stone

Commonly found flora & fauna in Ramgarh district as per working plan for Ramgarh Division (Source : Forest Department)

Flora

Sl No.	Common Name	Botanical Name	Family
1	Sal	Shorea robusta	Dipterocarpaceae
2	Teak, Sagaun	Tectona grandis	Verbenaceae
3	Mango	Mangifera Indica	Anacardiaceae
4	Neem	Azadirachta Indica	Meliaceae
5	Chiraonji Tree	Buchanania Lanzas	Anacardiaceae (Cashew family)
6	Palash	Butea monosperma	Fabaceae (Pea family)
7	Silk Cotton Tree	Bombax ceiba	Bombacaceae (baobab family)
8	Floss Silk Tree	Ceiba insignis	Bombacaceae
9	Arjun	Terminalia arjuna	Combretaceae (Rangoon creeper family)
10	Chebolic Myrobalan Hindi Name- Harra, Harad	Terminalia chebula	Combretaceae (Rangoon creeper family)
11	Baheda, Belliric Myrobalan, Beach Almond - Bahera	Terminalia bellirica	Combretaceae (Rangoon creeper family)
12	Amla	Phyllanthus emblica	Phyllanthaceae (Amla family)
13	Amaltas	Cassia fistula	Caesalpiaceae
14	Anjan	Hardwickia binata	Caesalpiaceae (Gulmohar family)
15	Gum Arabic, Baboola	Acacia nilotica subsp indica	Mimosaceae
16	Gum Arabic Tree, Kumat	Acacia senegal	Mimosaceae (Touch-me-not family)
17	Earleaf Acacia	Acacia auriculiformis	Mimosaceae (Touch-me-not family)
18	Flame Tree, Gulmohar	Delonix regia	Caesalpiaceae (Gulmohar family)
19	White Bark Acacia	Acacia leucophloea	Mimosaceae (Touch-me-not family)
20	Banyan tree, Bargad	Ficus bengalensis	Moraceae (Mulberry family)



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21	Java Plum, Jamun	Syzygium cumini	Myrtaceae (Bottlebrush family)
22	Blackwood tree - Kala shisham	Dalbergia latifolia	Fabaceae (Pea family)
23	Indian Butter tree, Mahua	Madhuca longifolia var latifolia	Sapotaceae(Mahua family)
24	Ceylon oak, Kusum	Schleichera oleosa	Sapindaceae (soapberry family)
25	Cluster fig, Goolar	Ficus racemosa	Moraceae (Mulberry family)
26	Kadam	Neolamarckia cadamba	Rubiaceae(Coffee family)
27	Bel	Aegle marmelos	Rutaceae (Citrus family)
28	Ber	Ziziphus mauritiana	Rhamnaceae (Ber family)
29	Gamhar	Gmelina arborea	Verbenaceae (Verbena family)

Fauna

Common Name	Scientific Name	Schedule (India)
Elephants	<i>Elephas maximus indicus</i>	I
Leopard	<i>Panthera pardus</i>	I
Striped Hyena	<i>Hyaena hyaena</i>	III
Indian Peacock	<i>Pavo cristatus</i>	I
Cobra	<i>Naja naja</i>	II
Indian Rock Python	<i>Python molurus</i>	I
Common Sand Boa	<i>Eryx johnii</i>	IV
Rat Snake	<i>Ptyas mucosa</i>	II
Common Krait	<i>Bungarus caeruleus</i>	IV
Banded Krait	<i>Bungarus fasciatus</i>	IV
Russell's Viper	<i>Daboia russelii</i>	II
Bamboo Pit Viper	<i>Trimeresurus gramineus</i>	IV
Chameleon	<i>Chamaeleo zeylanicus</i>	II
Tortoise	<i>Testudo spp. (varies)</i>	IV (varies)

Such impacts on environmental attributes, in turn have impacts on flora & fauna study area. In order that such impacts are minimal, appropriate mitigation measures are to be taken. A brief on such likely impacts are described below;



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Ramgarh District Survey Report for Stone

Impact due to Land Use Change

Project area is located in forest land or if there are trees & vegetation cover within the project area, change in land use pattern may cause loss of flora including cutting of trees and removal of vegetation cover i.e. shrubs, herbs and grass.

Impact due to Air Pollution

Air pollutant generated by project activities includes mostly dust (PM10, PM2.0 & SPM) & noxious gases (SO₂ & NO_x). These air pollutants if its level present in ambient air exceeds prescribed level affects flora in different ways as described below;

When harmful particles enter air leading to situation that leads to effects on plants due to air pollution. Air pollutants negatively affect plant development, primarily through meddling with resource collection, damage to leaf structure especially due to NO_x.

Sulfur Dioxide SO₂

Presence of SO₂ in air cause discolouration. It is known to hinder photosynthesis by disturbing specific mechanisms required for photosynthesis. Besides SO₂ may influence opening of stomata bringing about excessive loss of water.

Nitrogen Oxides NO_x

Presence of high level of NO_x in air amount stunts plant development

Dust

Presence of high level of dust in air may affect photosynthesis, respiration & transpiration. Generally, there is decreased productivity. They are mostly on account of reduction of leaf stomatal conductance, which has bearing on plant biomass formation & yield. Closing of stomata may decrease uptake of CO₂ & increase of water loss.

Impact due to Water Pollution

Presence of high level of total suspended solid (TSS) in surface water reduces level of Dissolved Oxygen (DO) in water. Reduced level of Dissolved Oxygen may affect aquatic plants in the surface water.

Impact on Fauna

Due to Change in Land Use

Change in land use pattern within project area may cause degradation of forest & vegetation growth within the project area. Such changes in forest cover may have impact on habitat of terrestrial & avi-fauna, loss in availability of shelter & food.

Impact due to Air Pollution

Smog caused by generation of dust in atmosphere by project activities affect fauna in the study area.



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Impact due to Water Pollution

As discussed earlier, water pollution due to stone mining may cause high level of TSS in surface water which in turn reduce level of Dissolved Oxygen (DO) in water. This affects aquatic fauna in water.

Impact due to Noise Pollution

High level of noise may disturb the fauna in the study are. But in stone mine, noise produced are limited to project site.



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Chapter - XXII Remedial Measures to mitigate the impact of mining on the Environment;

22.1 Mitigation Measures on Air Environment

It is suggested to adopt a wet drilling system this will minimise dust generation during drilling process

- ✓ Use of optimal quantity of exploration in blasting
- ✓ Practice controlled blasting to minimise generation of dust.
- ✓ Regular water sprinkling on haul road.
- ✓ Install wet dust suppression system in crushing and screening plant.
- ✓ Raise Green Belt in safety zone.
- ✓ Avenue plantation along a both sides of Link Road

Air Environment

Sl. No.	Particular	Activity	Pollutant	Impact	Mitigation Measures
1.	O.B. Removal A. If soft O.B.	Removal by using HEMM	Dust Noxious Gases	Rise in Level of air pollution	Water sprinkling on area from where OB is to be removed Proper maintenance of HEMM
2.	B. Hard Material	1. Drilling Blast holes 2. Blasting	Dust Noxious Gases	Rise in Level of air pollution	Water sprinkling on area identified for Drilling, Blasting Proper, regular maintenance of HEMM
3.	O.B. transport by Road to Dump yard	OB unloading OB handling OB loading into tippers	Dust Noxious Gases	Rise in Level of air pollution	Water sprinkling on Haul Road Proper maintenance of transport vehicles



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4. 4.1.	Mining of stone	Drilling Blast Holes	Dust Noxious Gases	Rise in Level of air pollution	Water sprinkling on area identified for Drilling
4.2.	Blasting	Blasting	Dust Noxious Gases	Rise in Level of air pollution	Use of optimum quantity of explosives (Powder Factor) Blasting during noon time Properly designed geometry of Blast holes
4.3	Handling of Run of Mine store		Dust Noxious Gases	Rise in Level of air pollution	
4.4	Loading Blasted Material on Tippers	Material on Tippers	Dust Noxious Gases	Rise in Level of air pollution	Water sprinkling on Blast Material
4.5	Transport of Blast Material to crusher cum screening plant		Dust Noxious Gases	Rise in Level of air pollution	Water sprinkling on Haul Road Water to be mixed with chemical developed by CMRI for effective dust control
5.	Sizing of ROM stone	Crushing Screening	Dust Noxious Gases	Rise in level of particulate Matter in Ambient Air	Provide wet type control system. This will have two components



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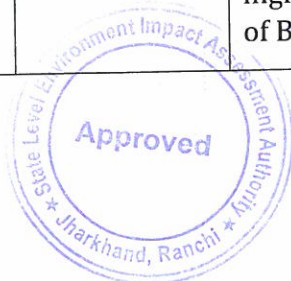
					Dust Containment Enclosures For crusher discharge area For vibratory / rotary system Dust Suppression System Spraying water at Key dust generation location
--	--	--	--	--	---

22.2 Mitigation Measures on Water Environment

- ✓ Provide garland drains around quarry to intercept surface runoff from high elevation to quarry and divert it to collection cum desilting pond.
- ✓ Water pump out from quarry will need to be diverted to storage cum desilting pond for treatment.
- ✓ Provide foot drain along toe of external dump. Foot drain will collect run of from external dump and divert to storage cum desilting pond for proper treatment.

Water Environment

Sl. No.	Particular	Activity	Pollutant	Impact	Mitigation Measures
1.	Mining of stone by opencast method of mining	Collection of water in; Collection of rain water in Quarry Collection of surface run-off	Suspended solid	High level of suspended solid in water	Store pumped out water in Desilting pond for removal of suspended solid.
2.	Mining of stone by opencast method	Provision of wash rooms	Generation of sewage having high level of BOD &	Discharge of sewage untreated impact quality of surface &	Provision of septic tank & cess pool



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			other pollutants	ground water	
3.	Mining of stone by opencast method & allied activities	Surface Run-off from lease area during rainy season. Particularly from external dump	Generation of surface Run-off with high level of suspended solid & flowing to surface water source near lease area	Quality of surface deterioration of water	Network of open drain in the lease area to intercept surface Run-off & divert it to Desalting pond before discharge to outside lease area

22.3 Mitigation Measures on Noise Environment

- ✓ Mining operation to be confined to day shift only
- ✓ At machineries to be repaired and maintained regularly.
- ✓ Green Belt in safety zone.
- ✓ Acoustic Barrier along the periphery of mining lease at critical points.

22.4 Mitigation Measure on Vibration

- ✓ Proper design of Blasting pattern to ensure ground vibration within limit
- ✓ Use of optimal quantity of explosives
- ✓ Hooter should be used to inform & warn workman before blasting in done.

22.5 Mitigation Measures on Landuse

In most of opencast stone mine generation of overburden will be minimal. Hence land degradation on account of storage of overburden will be minimal.

In this scenario it is recommended that;

- ✓ As much as possible at the end of mining operation O.B material stored in external dump will be liquidated and backfilled into quarry void.
- ✓ Quarry void should be reclaimed with water to create a water body with fencing and gates this could be used for agriculture or source of water for local people and it may facilitate in groundwater recharge or for pisciculture.

22.6 Mitigation Measures on Agriculture Land

At stated earlier agriculture area will be avoided. However, if in a case agriculture land is used in all cases care would be taken to remove & conserve topsoil from mining area before project activities are started.

For proper conservation of topsoil following steps would be taken;

- ✓ Area for storage of topsoil would be identified.
- ✓ Edge of topsoil dump would be protected with brick lining.



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- ✓ Grass would be raised on topsoil dump to arrest erosion and to conserve nutrients.

22.7 Mitigation Measure for Transportation

- ✓ To ensure that transportation vehicles have "Pollution Under Control Certificate".
- ✓ Regular repair and maintenance of transportation vehicle.
- ✓ Proper repair and maintenance of road.
- ✓ Regular water sprinkling on unpaved roads.
- ✓ Tree plantation on both side of haulage road.
- ✓ Dust generation from road also depends on speed of transport vehicles.
- ✓ There should be speed restriction of 20 KMPH on unpaved road.
- ✓ Traffic Impact Assessment will be done before start project activities in order to congestion.

22.8 Mitigation Measure on Soil Environment

Following mitigation measures are to be taken;

- ✓ Topsoil are to be removed & stored in an identified area. In order to conserve the quality of topsoil, grass cover are to be developed on topsoil dumps, Such conserved topsoil may be used for land reclamation & development of greenbelt.
- ✓ Movement of heavy mining machineries on agriculture land and productive land should be restricted.
- ✓ Movement of heavy vehicles may be restricted to lease area and road so that leaking oil & grease may not contaminate soil quality.

22.9 Mitigation Measures for Flora & Fauna

Considering importance of impact of environmental impact on eco-system in the study area, a series of mitigation measures are incorporated in planning of stone mine & its operation such mitigation measures are given below;

Site Selection Criteria

- ✓ Mine site are selected considering siting criteria prescribed by JSEIAA / JSPCB / MOEF & CC.
- ✓ Avoid site which have tree cover.
- ✓ Avoid site through which drainage channels passes through.
- ✓ **Ecological Assessment:** Conduct a thorough ecological survey to identify species and habitats present.
- ✓ **Buffer Zones:** Establish buffer zones around sensitive habitats to minimize disturbance.
- ✓ **Minimize Habitat Destruction:** Plan site layout to avoid key habitats and minimize vegetation clearing.
- ✓ **Translocation:** Consider translocating significant flora and fauna to safe areas.
- ✓ **Restoration Plans:** Develop a habitat restoration plan for post-mining activities.
- ✓ **Wildlife Corridors:** Currently all running mining lease and proposed are located outside from wildlife corridor. However, ensure wildlife corridors are maintained



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to facilitate animal movement. If a wildlife corridor passes through or around a mining lease area, a Wildlife Conservation Plan will be prepared.

These measures help protect biodiversity and mitigate the environmental impact of stone mining.

Environment Pollution Control Measures

Project design & operation integrate appropriate pollution control measures to control air pollution, water pollution, noise control, etc.

Mitigation Measures for Impact due to Air	<ul style="list-style-type: none">✓ Practice controlled blasting to minimise generation of dust.✓ Regular water sprinkling on haul road.✓ Raise Green Belt in safety zone.✓ Avenue plantation along a both sides of Link Road
Mitigation Measures for Impact due to Noise	<ul style="list-style-type: none">✓ Acoustic Barrier along the periphery of mining lease at critical points.✓ Mining operation to be confined to day shift only✓ At machineries to be repaired and maintained regularly.✓ Raise Green Belt in safety zone.✓ Avenue plantation along a both sides of Link Road
Mitigation Measures for Impact due to Water	<ul style="list-style-type: none">✓ Provision for desilting pond & check dam at regular interval along the discharge channel.



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Chapter – XXIII Reclamation of Mined out area (best practice already implemented in the district, requirement as per rules and regulation, proposed reclamation plan);

23.1 General

In most of cases stone is mined out by opencast method of mining which creates a quarry pit. It constitutes loss of value of a Land Resource. Also, a potential risk to human being & animal. with this consideration, mine pit must be Reclaimed after resource is exhausted & mining operations are closed.

**23.2 Options for Remediation
Scenario A**

In this scenario, stone reserve is overlain by a of layer overburden consiting of soil /weathered rock. Mining of stone should be preceded. by removal of OB & their storage is non-mining area. At the end of mining operation, this O.B. Dump would be liquidated & material would be back filed into the pit or they would be left as such but reclaimed biologically. Quarry will be reclaimed after it is backfilled.

Scenario B

There is no over burden. In this case, quarry would be reclaimed immediately after mining operations are over.

In both scenario as described, above at the end mining operation, to avoid Left mine pit is huge. Even if part of it is particy filled with overburden materials. he avoid created by mining of stone constitutes loss of land Resource a safety hazard & A scan on earth surface in view of above plan for remediation of minded out area. has broadly two objectives;

- Mined out area should be reclaimed for Eco-friendly productive use. On sustainable basis they may converted to a water body. This has number of advantages which includes.
 - This will facilitate in ground water Recharge in this area.
 - This water body may be used for pisci culture.
 - Water may be used for irrigation in nearby area.
- Benches above water level be used for raising plantation.

23.3 Safety measures

Mine pil- filled with water after mining operation are over & mine is closed is a major Source for drowning of people & animals.

Measures must be taken to restrict free access to water body. One quarry must be fenced & wicket gate with locking arrangement must be provided.



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Chapter – XXIV Risk Assessment & Disaster Management Plan

24.1 General

Mining activities are associated with risk that can turn into hazard to life & health if not addressed in time & adequately. This need to be identified & mitigation measures are to be provided to prevent it on measures to be taken to minimise its effects.

24.2 Categorisation of Risks

Risk associated with mining projects may be, broadly, categorised into two categories namely on site & off site Risk. They are described below.

On Site Risks : On site risks that need to be addressed are desorbed.

Offsite Risks: Mining and allied activities may also cause offsite risk.



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24.3 Risk Assessment & its Preventive Measures

Particulars	Risk Assessment	Preventive Measures
<p>Natural</p>	<p>Flooding of opencast working due to heavy rains ingress of water from nearby water body i.e. river, reservoir etc.</p> <p>Earthquake</p> <p>Earthquake in the area may cause damage to life & property.</p> <p>Land slide</p> <p>There might be Land slide in external dump or high wall of opencast mine</p>	<p>Flooding</p> <p>The drainage plan (Dewatering scheme) of the mine has to be prepared considering the maximum rainfall in the area corresponding to maximum quantity of water accumulated in quarry, sufficient capacity of pump need to be provided for preventing flooding of quarry.</p> <p>Earthquake</p> <p>If the mine is in zone iii & above of impact of earthquake must be integrated with planning & design of the project.</p> <p>Land Slide</p> <p>To prevent land slide in the mine following measures need to be taken care nature of rock corresponding to</p> <ul style="list-style-type: none"> ✓ Proper slope to be provided to advancing bench of the mine ✓ Proper slope (45° - 50°) to be provided for terminal slope to the quarry ✓ External dump has to be properly planned with proper side slope to prevent slope failure. ✓ External dump should be located on a stable ground with load bearing capacity to support load of external dump. ✓ External dump should be proper drainage plan to prevent building up of internal hydraulic pressure.
<p>Mechanical</p>	<p>Operation of mine involves use of a number of Heavy earth moving Machines including Drills, Backhoe, Shovel, dumper</p>	<ul style="list-style-type: none"> ✓ Toe wall with foot drain. ✓ Regular training to equipment operator ✓ Regular repair & maintenance of equipment



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	<p>etc. Operation of these equipment's may cause accident leading to loss of life or equipment's similarly material including row material, waste material & product are to be transported by road using dumper, tipper.</p> <p>Unregulated transportation may lead to road accident</p>	
<p>Electrical</p>	<p>Project operation requires operation of electrical equipment. They are operated on high voltage & use cables. Use of electrical equipment may cause fire or electrocution</p>	<ul style="list-style-type: none"> ✓ Electrical system needs to be designed following relevant prevailing rules as per Act. ✓ Regular maintenance and upkeep of cables, switches etc.
<p>Fire</p>	<p>Operation of mine requires use of electrical power & diesel oil. Use of electrical power & oil may cause Fire</p>	<ul style="list-style-type: none"> ✓ Safe storage of diesel. ✓ No Smoking Zone. ✓ Maintenance of electrical wires ✓ The electrical cables with PVC sheath to prevent over heating and fire. ✓ The cables should have wire with appropriate size of core to carry required current. ✓ Provision for fire alarm and arrangement for firefighting appliances.
<p>Blasting & Vibration</p>	<p>Operation of mine needs blasting using explosives.</p>	<ul style="list-style-type: none"> ✓ Proper design of Blasting pattern to ensure ground vibration within limit ✓ Use of optimal quantity of explosives



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	<p>Unattended & unplanned blasting may cause accident.</p> <p>The planned blasting may cause ground vibration outside the lease area that may affect stability of structures located in close vicinity</p> <p>Ground Vibration</p> <p>The planned blasting may cause ground vibration outside the lease area that may affect stability of structures located in close vicinity</p>	<p>✓ Hooter should be used to inform & warn workman before blasting in done.</p>
<p>Environmental Pollution</p>	<p>Mining activities may cause health risks for workmen they may be due to exposure to high level of dust or noise in work area.</p> <p>Project activities may generate environmental pollution that may affect health of people living in vicinity of lease area</p>	<p>✓ All workmen to be provided with ear mutt & mask</p> <p>✓ Pollution control measures to minimise environmental pollution such as raised plantation in Safety Zone, avenue plantation and dust suppression.</p> <p>✓ Regular health check-up of workman as per DGMS Rules.</p> <p>✓ Trucks with Pollution under control certificate to be allowed</p>
<p>Road Accidents</p>	<p>Major Causes of road accidents are;</p> <p>Over Speed</p>	<p>Follow provision in Motor Vehicles Act, 1988 & its amendment</p>



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Non-Observance of traffic rules & traffic signs
Mechanical Failure of Vehicle

Ministry of Road Transport has published S.O. 1522 (E) prescribing speed limits on different types of roads for different category of vehicle State Govt. are empowered to fix speed limits within their state.

In addition, Section 112 of Motor Vehicles (Driving) Regulation, 2017 prohibits drivers to exceed prescribed speed limit on a road.

Table below gives speed limits prescribed by Central Govt. Speed limit sign board need to fixed on access road.

Maximum speed per hour in kilometres on roads in India April 2018					
S. No.	Class of Motor Vehicles	Expressway with Access Control	4 lane and above divided carriageway (roads with Median strips/Dividers)	Road within Municipal Limits	Other Roads
(1)	(2)	(3)	(4)	(5)	(6)
1.	Motor vehicles used for carriage of passengers comprising not more than eight seats in addition to the driver's seat (M1 category vehicles)	120	100	70	70
2.	Motor vehicles used for carriage of passengers comprising nine or more seats in addition to the driver's seat (M2 and M3 category Vehicles)	100	90	60	60
3.	More vehicles used for carriage of goods (All N category Vehicles)	80	80	60	60
4.	Motor Cycles	80*	80	60	60
5.	Quadricycle	-	60	50	50
6.	Three wheeled vehicles	-	50	50	50

* If permitted to ply on Expressway.

In addition, proper sign boards to be provided near densely populated area, school, hospital, etc. & road intersections.

Road rambles to be provided near school, hospital, densely populated area and road intersection.




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24.4 Disaster Management Plan

Provision of Siren

Arrangement to be made to provide siren to inform workman about occurrence of accident and instruction that on hearing siren mining activities to be stopped & assemble at pre - determined area

First Aid centre

A first aid centre to be provided next to mine office.

Arrangement for Medical Aid

Arrangement shown be in place so that services ambulance can be available for rescue of injured workmen Provided medical attendance to them. For this purpose, Hospital/Nursing homes with ambulance facility need to be identified.

Arrangement to be made for information to police and local administration

An executive to be nominated who is responsible for handling disaster situation.

Mine office should serve as control room with telephone facility phone number of hospitals, police station, local administration should be readily available.

24.5 Conclusion

Keeping above in consideration, proper risk and disaster management plan need to be developed along with mining plan for all mining project. Operated strictly following DGMS rules. D.M.P. Will have following components. All mines should be planned.



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24.5 Risk & their Probability

RISK IDENTIFIED	PROBABILITY
<p>Fire in diesel stored for operation of equipments. In most of places electrical power is not available.</p>	<p>LOW</p> <p>As proponents procure diesel on daily basis in absence of proper storage.</p>
<p>Blasting for mining of stone. On an average a stone mine would produce 250 T / Day in small stone mines. This will use approx. 35 Kg of explosives.</p> <p>This produces ground vibration and fly rock. Vibration may affect stability of structure & fly rock may injure people.</p>	<p>LOW</p> <p>Since mines are located 500m away from habitated area problem of ground vibration & fly rock are of low risk.</p>
<p>Road Accident</p> <p>This may be due to movement of vehicles on road carrying minerals.</p>	<p>LOW</p> <p>As number of vehicles per day in small mine may be 25-30 trips per day.</p> <p>Advice vehicles operator to control speed near habitation area.</p>
<p>Electrocution</p> <p>In case of mines which operated on electrical power. Power cables are used. There is risk of electrocution.</p>	<p>LOW</p>
<p>Environmental Pollution</p> <p>Due to;</p> <ul style="list-style-type: none"> ✓ Blasting ✓ Drilling ✓ Handling ✓ Transporting 	<p>MEDIUM</p> <p>Environmental Pollution can be controlled by suitable mitigative measures including;</p> <ul style="list-style-type: none"> ✓ Using optimal quantity of explosive. ✓ Water Sprinkling on drilling site. ✓ Trucks carrying product stone to be covered. ✓ Regular water sprinkling on haul road. ✓ Vehicles with pollution under control certificate. ✓ Plantation in safety zone. ✓ Avenue plantation along link road.



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Natural Risk		
Earthquake	LOW As district fall in Zone II which is low risk zone.	
Flood	LOW <ul style="list-style-type: none"> ✓ All identified potential areas are away from river. ✓ Proper arrangement for dewatering of quarry during the monsoon period. 	
Slope Failure	LOW Mineral resource is massive deposit having no shear planes. Hence land slide risk is low. Moreover, running slope will be maintain at 75° to avoid slope failure.	
LOW	MEDIUM	HIGH
0% to 30%	30% to 60%	60% to 100%



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Chapter - XXV Details of the Occupational Health issues in the District. (Last five-year data of number of patients of Silicosis & Tuberculosis is also needs to be submitted);



कार्यालय, जिला यक्ष्मा पदाधिकारी, रामगढ़

सदर अस्पताल कैम्पस, छत्तरमाण्डू, रामगढ़, जिला : रामगढ़ (झारखण्ड)
Ph . No. : [06553] - 261909 (O), Email : dtoghmg@mtcp.org



पत्रांक : ...226 / DTC

प्रेषक,

जिला यक्ष्मा पदाधिकारी,
रामगढ़।

सेवा में,

जिला खनन पदाधिकारी,
रामगढ़।

रामगढ़, दिनांक : 19.12.2023

विषय : रामगढ़ जिला में विगत पाँच वर्षों में पाये गये Silicos & Tuberculosis के मरीजों की संख्या उपलब्ध कराने के संबंध में।

प्रसंग : आपके कार्यालय पत्रांक 1262 / खनन, रामगढ़ दिनांक 12.12.2023

महाशय,

उपयुक्त विषयक प्रासंगिक पत्र के आलोक में रामगढ़ जिलान्तर्गत पिछले पांच वर्षों के Tuberculosis मरीजों की संख्या विहित प्रपत्र में भरकर अग्रेतर कार्रवाई हेतु भेजी जा रही है।

Sl. No.	Year	No. of Patient of Tuberculosis
1	2019	1244
2	2020	754
3	2021	939
4	2022	1217
5	2023 (upto Sept. 2023)	960

विश्वासभाजन

for जिला यक्ष्मा पदाधिकारी,
रामगढ़।

रामगढ़, दिनांक :

ज्ञापांक :/DTC

प्रतिलिपि : सिविल सर्जन, रामगढ़ को सादर सूचनार्थ समर्पित।

जिला यक्ष्मा पदाधिकारी,
रामगढ़।

टी0 बी0 हारेगा, देश जीतेगा।



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for

जिला खनन पदाधिकारी
रामगढ़

Ramgarh District Survey Report for Stone

कार्यालय, जिला यक्ष्मा पदाधिकारी, रामगढ़
सदर अस्पताल कैम्पस, छत्तरमाण्डू, रामगढ़, जिला : रामगढ़ (झारखण्ड)
Ph. No. : (06553) - 261909 (O), Email : dtotjhrmg@mtcp.org

पत्रांक : 105 / DTC

प्रेषक,
जिला यक्ष्मा पदाधिकारी,
रामगढ़।

सेवा में,
जिला खनन पदाधिकारी,
रामगढ़।

रामगढ़, दिनांक : 10/04/2024

विषय :- रामगढ़ जिलान्तर्गत SILICOSIS & TUBERCULOSIS मरीजों से संबंधित प्रतिवेदन के संबंध में।
प्रसंग :- भवदीय पत्रांक-322/खनन, रामगढ़, दिनांक-04.04.2024 के क्रम में।
महाशय,

उपर्युक्त विषयक एवं प्रासंगिक पत्र के संबंध में कहना है कि पिछले पांच वर्षों का रामगढ़ जिलान्तर्गत SILICOSIS & TUBERCULOSIS मरीजों से संबंधित प्रतिवेदन कार्यालय पत्रांक-226/DTC, दिनांक-19.12.2023 के माध्यम से विहित प्रपत्र में उपलब्ध कराया गया था। जिसमें केवल TUBERCULOSIS मरीजों से संबंधित प्रतिवेदन उपलब्ध कराया गया। किंतु पिछले पांच वर्षों में रामगढ़ जिलान्तर्गत SILICOSIS मरीजों से संबंधित आंकड़े शून्य होने कारण SILICOSIS मरीजों से संबंधित प्रतिवेदन कार्यालय के द्वारा उपलब्ध नहीं कराया गया।

अतः पिछले पांच वर्षों में रामगढ़ जिलान्तर्गत SILICOSIS मरीजों से संबंधित आंकड़े शून्य है।

विश्वासभाजन
जिला यक्ष्मा पदाधिकारी,
रामगढ़।
रामगढ़, दिनांक : 10/04/2024

ज्ञापक : 105 / DTC
प्रतिलिपि : मित्रिल सर्जन रामगढ़ को सादर सूचनाार्थ समर्पित।

जिला यक्ष्मा पदाधिकारी,
रामगढ़।



10/04/2024

Ramgarh District Survey Report for Stone

Chapter - XXVI Plantation and Green Belt development in respect of leases already granted in the District;

26.1 Status of Plantation & Greenbelt Development in respect of lease already granted in the District

Plantation were raised in safety zone as prescribed in Environment Clearance (EC) & Consent to Operate (CTO) conditions. Average survival rate was 40% -50%. However, on closure of mine the project site was abandoned. In such circumstances, the tree covers were decreases due to lack of maintenance and absence of security. Only in a few cases some of trees planted in safety zone are available.

Table given below show the current status of plantation in terms of proposed number of plants vis-e-vis the actual existing plants.

Sl. No.	Name of Lessee	Area for Safety Zone (Ha)	No. of Plants proposed @1600 plants per hectare	Actual Existing Trees on site	Difference
			A	B	A-B
1	मे0 एस0एस0 टैंडिंग एजेन्सी, प्रो0-श्री शैलन्द्र कुमार मेहता	1.45	2320	110	2210
2	मे0 देवन्ती प्रोजेक्टस प्रा0 लि0, निदेशक- श्री लीलाम्बर बड़ाईक पिता- श्री माधो बड़ाईक	0.45	720	180	540
3	श्री मनोहर पाठक, पिता- श्री सत्यनारायण पाठक	0.76	1216	60	1156
4	श्री मिन्हाज खान, पिता- श्री जमाल अषरफ	0.49	784	15	769
5	श्री हर्षराज माईनिंग एल0एल0पी, पार्टनर श्री अभिषेक कुमार, पिता- श्री बंशी प्रसाद	1.66	2656	80	2576
6	श्रीमति ललिता देवी, पति- रोहनराम बेदिया,	0.463	741	150	591
7	मे0 एलाईट पावर प्रोजेक्ट कंस्ट्रक्शन प्रा0लि0,	0.969	1550	70	1480



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Sl. No.	Name of Lessee	Area for Safety Zone (Ha)	No. of Plants proposed @1600 plants per hectare	Actual Existing Trees on site	Difference
			A	B	A-B
8	(1) कुमारी दीपमाला, पिता-श्री रविन्द्र पासवान, ग्राम- कटहल टोला, पो0+थाना- सोहराय, जिला- नालन्दा (बिहार) (2) श्रीमति मीना देवी, पति- श्री सतेन्द्र कु0 वर्मा, ग्राम0+पो0- राजगीर, थाना- राजगीर, जिला- नालन्दा (बिहार) ज्त्तंदेमिमतमक जव सर्वश्री हिलटॉप इंफ्राटेक, पार्टनर श्री शिव कुमार, पिता- स्व0 हीरालाल, साकिन- चौथा तल्ला, करनी हाईटस, क्लब रोड, राँची	0.68	1088	60	1028
9	M/s Subhash Agarwal	0.462	739	118	621
10	मे0 न्यू इण्डिया इण्डस्ट्रीज, पार्टनर (1) मो0 आबिद हुसैन पिता- नबीबक्श अंसारी, ग्रा0- गंधोनिया, पो0- बेको, थाना- बगोदर, जिला- गिरीडीह। (2) श्री शेखर मिश्रा, पिता- श्री स्व0 महेन्द्र मिश्रा, ग्रा0- पत्थलडीहा, पो0- बरवाडीह, थाना-बगोदर, जिला- गिरीडीह।	0.700	1120	2	1118
11	मे0 जी0बी0 इन्टरप्राईजेज, पार्टनर(1) श्री नारायण बेदिया, पिता-श्री रामसय बेदिया, ग्रा0- दाड़ीदाग, पो- पाली, थाना- पतरातु, जिला- रामगढ़ (2) श्रीमती आशा रानी टेटे, पिता- श्री तेलेस्फोर किडो, ग्रा0- कण्ज.1207ए धुर्वा डैम साईट, जिला-राँची, (3) श्री अनिल कुमार गौतम, पिता-श्री	0.439	702	150	552



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Sl. No.	Name of Lessee	Area for Safety Zone (Ha)	No. of Plants proposed @1600 plants per hectare	Actual Existing Trees on site	Difference
			A	B	A-B
	रामचन्द्र बेदिया, ग्रा0- दाड़ीदाग, पो0-पाली, थाना- पतरातु, जिला- रामगढ़।				
12	M/s Shiv Mining & Stone Crushers, पार्टनर (1) श्री चरेन्द्र बेदिया, पिता- स्व0 शिवचरण बेदिया, ग्राम- लेम, पो0- हरिहरपुर, थाना- बासल, जिला-रामगढ़ (2) श्री बिनोद कुमार सिन्हा पिता- स्व0 रामबल्लव सहाय, ग्रा0- न्यू कॉलोनी बरही, थाना- बरही, जिला- हजारीबाग	0.427	683	400	283
13	मे0 ऋषि कंस्ट्रक्शन एण्ड सप्लायर, प्रो0- श्री छोटेलाल महता	0.42	672	10	662
14	मे0 न्यू इण्डिया इण्डस्ट्रीज, पार्टनर (1) मो0 आबिद हुसैन पिता- नबीबक्श अंसारी, ग्रा0- गंधोनिया, पो0- बेको, थाना- बगोदर, जिला- गिरीडीह। (2) श्री शेखर मिश्रा, पिता- श्री स्व0 महेन्द्र मिश्रा, पिता- श्री स्व0 महेन्द्र मिश्रा, ग्रा0- पत्थलडीहा, पो0-	0.496	794	100	694



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Sl. No.	Name of Lessee	Area for Safety Zone (Ha)	No. of Plants proposed @1600 plants per hectare	Actual Existing Trees on site	Difference
			A	B	A-B
	बरवाडीह, थाना- बगोदर, जिला- गिरीडीह।				
15	मे० माँ तारा स्टोन माईन्स, पार्टनर (1) श्री हीरालाल मुण्डा, पिता- श्री कामेश्वर मुण्डा, ग्रा०- कोड़ी, पो०- पाली, थाना- पतरातु, जिला- रामगढ़। (2) श्री रोहन राम बेदिया, पिता- स्व० लंगरा बेदिया ग्रा०- पाली, पो०- पाली, थाना-पतरातु, जिला- रामगढ़।	0.044	70	150	+80
16	मे० हनुमन्त लाल स्टोन माईन्स, पार्टनर (1) श्री कमल किशोर बेदिया, पिता- श्री गनौरी बेदिया, ग्रा०+पो०- पाली, थाना- पतरातु, जिला- रामगढ़ (2) श्री राम कृष्णा सिंह, पिता- श्री कामेश्वर नारायण सिंह, ग्रा०+पो०- पाली, थाना- पतरातु, जिला- रामगढ़	0.28	448	50	398

NOTE :

1705 out of 16303 trees (i.e. 10%) were found on the sites.

The authority will direct the concerned leases to carry out plantation in the safety zone as per provision in approved mining plan/EC/CTO within December, 2024.

26.2 Propose Plantation and green belt within the lease area and around it serve different purposes including

- Mitigate air pollution
- Minimise the carbon foot print as it serves as sink & sequester carbon di - oxide produce oxygen
- Control soil erosion & helps in maintaining soil moisture
- It has aesthetic function as it screens the sight of the mine
- It also abets noise



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Ramgarh District Survey Report for Stone

26.3 Location

- Plantation / green belt in mining project should be developed at following location.
- Safety zone: - 7.5m wide strip aEdge of lease area they should be planted @ 2.5m c/c.
- Backfield area of part of quarry is proposed to be backfield with overburden material removed in course of mining of stone then plantation has to be raised over this area.
- Upper Benches of Mine - in lease it is proposed to use the quarry for water storage, then at post closure stage upper benches of quarry should be used for raising plantation.
- Unused Area - in those caser remains, unused then that area has to be used for development of green belt
- External dump
External dumps, if not liquidated at closure of mine has to be used for raising plantation.
- Strip Plantation along. Both sides of link road

26.4 Species

Green belt/plantation should be developed using tree & shrubs. Species should be selected on following consideration.

- Native species
- Require less maintenance
- Are resistant to pollution

Species should be selected in consultation with local forest officials.

26.5 Protection & Care

Arrangement for protection of plantation against grazing by animals & other anthropogenic pressure should be made.

Arrangement for proper watering has to be provided.

Plantation needs protection & care for at lease 3 years.



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Number of Tree on Site	110
Mining Lease	मे० एस०एस० टैडिंग एजेन्सी, प्र०-श्री शैलन्द्र कुमार मेहता
Location	मौजा- कुन्दरूखुर्द, थाना- रामगढ़ खाता नं०- 137, प्लॉट नं० 1958 अष, 1970 अघा
Area for Plantation as per Plan (Ha.)	1.45
Number of Tree proposed in Mining Plan	1595

The authority will direct the concerned leases to carry out plantation in the safety zone as per provision in approved mining plan/EC/CTO within December, 2024.



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Number of Tree on Site	180
Mining Lease	श्री देवन्ती प्रोजेक्ट्स प्रा० लि०, निदेशक- श्री लीलाम्बर बड़ाईक पिता- श्री माधो बड़ाईक.
Area for Plantation as per Plan (Ha.)	0.45
Number of Tree proposed in Mining Plan	495



The authority will direct the concerned leases to carry out plantation in the safety zone as per provision in approved mining plan/EC/CTO within December, 2024.

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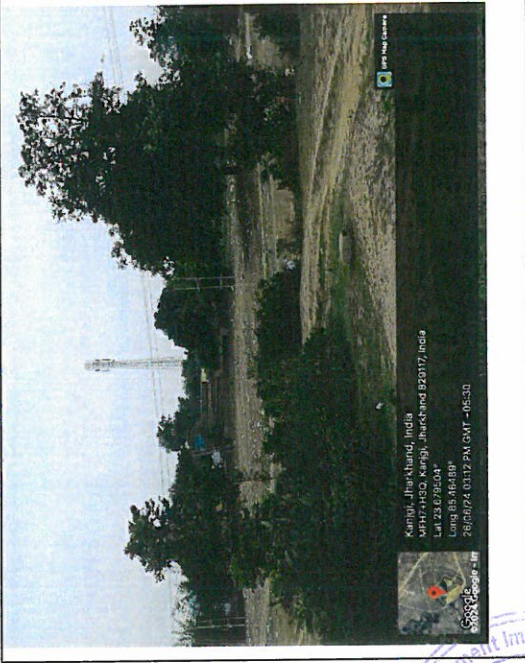

	
Number of Tree on Site	60
Mining Lease	श्री मनोहर पाठक, पिता- श्री सत्यनारायण पाठक
Location	मौजा- जरियो थाना- रामगढ़, नं०-109 खाता नं०-86, प्लॉट नं०-717 अंश, 1451 अंश
Area for Plantation as per Plan (Ha.)	0.76
Number of Tree proposed in Mining Plan	760

The authority will direct the concerned leases to carry out plantation in the safety zone as per provision in approved mining plan/EC/CTO within December, 2024.



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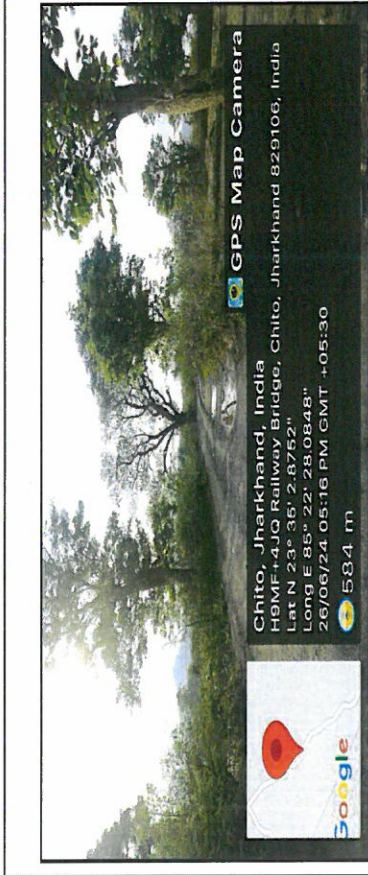
	
<p>Number of Tree on Site</p>	<p>15</p>
<p>Mining Lease</p>	<p>श्री मिन्हाज खान, पिता- श्री जमाल अबरफ</p>
<p>Location</p>	<p>मौजा- कजंगी, थाना- माण्डु, नं०- 141, खाता नं०-26, प्लॉट नं०-589, 590, 591, 592</p>
<p>Area for Plantation as per Plan (Ha.)</p>	<p>0.49</p>
<p>Number of Tree proposed in Mining Plan</p>	<p>490</p>
<p>The authority will direct the concerned leases to carry out plantation in the safety zone as per provision in approved mining plan/EC/CTO within December, 2024.</p>	



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Number of Tree on Site	80
Mining Lease	श्री हर्षराज माइनिंग एल0एल0पी, पार्टनर श्री अभिषेक कुमार, पिता- श्री बंशी प्रसाद
*Location	मौजा- चिटो थाना- पतरातु, 67 खाता नं0-17, 22, 14, 13, 40, 24 प्लॉट नं0- 267, अंष, 268, 269, 270 अंष, 271 एवं 273 अंश
Area for Plantation as per Plan (Ha.)	1.66
Number of Tree proposed in Mining Plan	1250

The authority will direct the concerned leases to carry out plantation in the safety zone as per provision in approved mining plan/EC/CTO within December, 2024.

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<p>Number of Tree on Site</p>	<p>150</p>
<p>Mining Lease</p>	<p>श्रीमति ललिता देवी, पति- रोहनराम बेदिया,</p>
<p>Location</p>	<p>मौजा- पाली थाना- पतरातु खाता नं०-10, 46, 61, 92 प्लॉट नं०-35, 39, 40, 41, 43 अंश, 45 अंश, 131 अंश, 130 अंश</p>
<p>Area for Plantation as per Plan (Ha.)</p>	<p>0.463</p>
<p>Number of Tree proposed in Mining Plan</p>	<p>800</p>

The authority will direct the concerned leases to carry out plantation in the safety zone as per provision in approved mining plan/EC/CTO within December, 2024.



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Ramgarh District Survey Report for Stone

Number of Tree on Site	70
Mining Lease	मे0 एलाईट पावर प्रोजेक्ट कंस्ट्रक्शन प्रा0लि0,
Location	दुलमी स्टोन ब्लॉक मौजा- सीरू थाना- रजरप्पा खाता नं0- 107, प्लॉट नं0-171 अंश
Area for Plantation as per Plan (Ha.)	0.969
Number of Tree proposed in Mining Plan	1066
The authority will direct the concerned leases to carry out plantation in the safety zone as per provision in approved mining plan/EC/CTO within December, 2024.	



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 <p>Soso, Jharkhand, India HIRV+9F, Soso, Jharkhand 825101, India Lat N 23° 34' 27.6772" Long E 85° 35' 46.5072" 20/00/24 12.55 100.00M +05.30</p>	 <p>Soso, Jharkhand, India HIRV+9F, Soso, Jharkhand 825101, India Lat N 23° 34' 27.6772" Long E 85° 35' 46.5072" 20/00/24 12.55 100.00M +05.30</p>
Number of Tree on Site	118
Mining Lease	M/s Subhash Agarwal
Location	मौजा- सोसो एवं जरियो, थाना- रजरप्पा खाता नं0-86 एवं 157 प्लॉट नं0-89 अंश एवं 708 अंश
Area for Plantation as per Plan (Ha.)	0.462
Number of Tree proposed in Mining Plan	1200

The authority will direct the concerned leases to carry out plantation in the safety zone as per provision in approved mining plan/EC/CTO within December, 2024.



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	<p>2</p>
<p>Number of Tree on Site</p>	<p>Mining Lease</p> <p>मे० न्यू इण्डिया इण्डस्ट्रीज, पार्टनर (1) मो० आबिद हुसैन पिता- नबीबक्श अंसारी, ग्रा०- गंधोनिया, पो०- बेको, थाना- बगोदर, जिला- गिरीडीह। (2) श्री शेखर मिश्रा, पिता- श्री स्व० महेन्द्र मिश्रा, ग्रा०- पथलडीहा, पो०- बरवाडीह, थाना-बगोदर, जिला- गिरीडीह।</p>
<p>Location</p>	<p>मौजा- भईया सगातु एवं बम्हन सगातु, थाना- गोला नं० 66 खाता नं०- 17, 29, 44 एवं 9 प्लॉट नं०- 537 अंश, 532, 535, 41 अंश</p>
<p>Area for Plantation as per Plan (Ha.)</p>	<p>0.700</p>
<p>Number of Tree proposed in Mining Plan</p>	<p>1750</p>

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The authority will direct the concerned leases to carry out plantation in the safety zone as per provision in approved mining plan/EC/CTO within December, 2024.

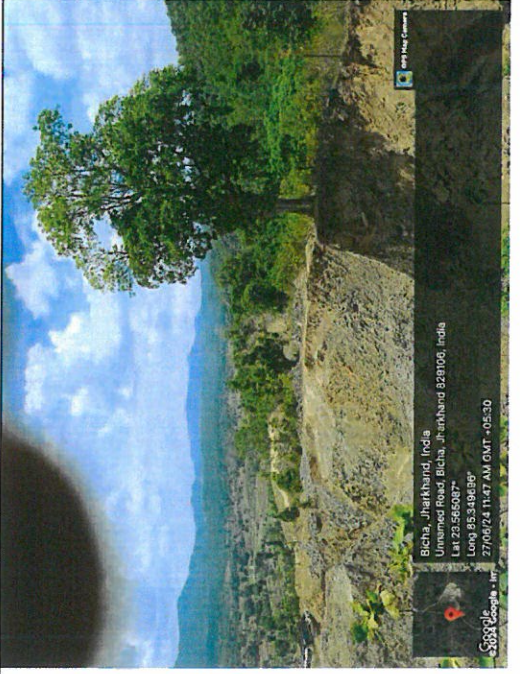

Ramgarh District Survey Report for Stone

<p>Number of Tree on Site</p>	<p>150</p>
<p>Mining Lease</p>	<p>मे 0 जी 0 बी 0 इन्टरप्राइजेज, पार्टनर(1) श्री नारायण बेदिया, पिता-श्री रामसय बेदिया, ग्रा 0- दाड़ीदाग, पो- पाली, थाना- पतरातु, जिला- रामगढ़ (2) श्रीमती आशा रानी टेटे, पिता- श्री तेलेस्फोर किडो, ग्रा 0- कप्ल.1207ए धुर्वा डैम साईट, जिला-रौंची, (3) श्री अनिल कुमार गौतम, पिता-श्री रामचन्द्र बेदिया, ग्रा 0- दाड़ीदाग, पो 0-पाली, थाना- पतरातु, जिला- रामगढ़।</p>
<p>Location</p>	<p>मौजा- दाड़ीदाग, थाना- पतरातु नं 0 71, खाता नं 0- 06, 13, 30, प्लॉट नं 0- 80 अंश, 79, 81 अंश, 77</p>
<p>Area for Plantation as per Plan (Ha.)</p>	<p>0.439</p>
<p>Number of Tree proposed in Mining Plan</p>	<p>90</p>
<p><i>The authority will direct the concerned leases to carry out plantation in the safety zone as per provision in approved mining plan/EC/CTO within December, 2024.</i></p>	



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Number of Tree on Site	400
Mining Lease	M/s Shiv Mining & Stone Crushers, पार्टनर (1) श्री चरेन्द्र बेदिया, पिता- स्व० शिवचरण बेदिया, ग्राम- लेम, पो०- हरिहरपुर, थाना- बासल, जिला-रामगढ़ (2) श्री बिनोद कुमार सिन्हा पिता- स्व० रामबल्लव सहाय, ग्राम- न्यू कॉलोनी बरही, थाना- बरही, जिला- हजारीबाग
Location	मौजा- बीचा, थाना- पतरातु सं० 37, खाता नं०- 77, 90, 88, प्लॉट नं०- 1136 अंश, 1137, 1138 अंश
Area for Plantation as per Plan (Ha.)	0.427
Number of Tree proposed in Mining Plan	683

The authority will direct the concerned leases to carry out plantation in the safety zone as per provision in approved mining plan/EC/CTO within December, 2024.



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Number of Tree on Site	10
Mining Lease	मे० ऋषि कंस्ट्रक्शन एण्ड सप्लायर, प्रो०- श्री छोटेलाल महता
Location	मौजा- चटाक, थाना- रजरप्पा नं० 136, खाता नं०-34, 61 प्लॉट नं०- 672, 669, 676, 677, 674, 673 एवं 678
Area for Plantation as per Plan (Ha.)	0.42
Number of Tree proposed in Mining Plan	672

The authority will direct the concerned leases to carry out plantation in the safety zone as per provision in approved mining plan/EC/CTO within December, 2024.



(Signature)
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Ramgarh District Survey Report for Stone

<p>Number of Tree on Site</p>	<p>100</p>
<p>Mining Lease</p>	<p>मे० न्यू इण्डिया इण्डस्ट्रीज, पार्टनर (1) मो० आबिद हुसैन पिता- नबीबक्श अंसारी, ग्रा०- गंधोनिया, पो०- बेको, थाना- बगोदर, जिला- गिरीडीह। (2) श्री शेखर मिश्रा, पिता- श्री स्व० महेन्द्र मिश्रा, पिता- श्री स्व० महेन्द्र मिश्रा, ग्रा०- पथलडीहा, पो०- बरवाडीह, थाना- बगोदर, जिला- गिरीडीह।</p>
<p>Location</p>	<p>मौजा- रोला, थाना- गोला नं० 64, खाता नं०- 13, 16, 23, प्लॉट नं०-617 अंश, 619 अंश, 633 अंश, 634, 638 अंश, 616, 615 अंश</p>
<p>Area for Plantation as per Plan (Ha.)</p>	<p>0.496</p>
<p>Number of Tree proposed in Mining Plan</p>	<p>1240</p>

The authority will direct the concerned leases to carry out plantation in the safety zone as per provision in approved mining plan/EC/CTO within December, 2024.

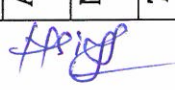


जिल्हा खनन पदाधिकारी
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Ramgarh District Survey Report for Stone

<p>Number of Tree on Site</p>	<p>150</p>
<p>Mining Lease</p>	<p>मे० माँ तारा स्टोन माईन्स, पार्टनर (१) श्री हीरालाल मुण्डा, पिता- श्री कामेश्वर मुण्डा, ग्रा०- कोडी, पो०- पाली, थाना- पतरातु, जिला- रामगढ़। (२) श्री रोहन राम बेदिया, पिता- स्व० लंगरा बेदिया ग्रा०- पाली, पो०- पाली, थाना-पतरातु, जिला- रामगढ़।</p>
<p>Location</p>	<p>मौजा- कोडी, थाना- पतरातु नं० ६१, खाता नं०- २५, प्लॉट नं०-७९० अंश, ९८३ अंश</p>
<p>Area for Plantation as per Plan (Ha.)</p>	<p>०.०४४</p>
<p>Number of Tree proposed in Mining Plan</p>	<p>११००</p>
<p>The authority will direct the concerned leases to carry out plantation in the safety zone as per provision in approved mining plan/EC/CTO within December, 2024.</p>	




 जिल्हा खानन पदाधिकारी
 रामगढ़

Ramgarh District Survey Report for Stone

<p>Number of Tree on Site</p>	<p>50</p>
<p>Mining Lease</p>	<p>मे० हनुमन्त लाल स्टोन माईन्स, पार्टनर (१) श्री कमल किशोर बेदिया, पिता- श्री गनौरी बेदिया, ग्रा०+पो०- पाली, थाना- पतरातु, जिला- रामगढ़ (२) श्री राम कृष्णा सिंह, पिता- श्री कामेश्वर नारायण सिंह, ग्रा०+पो०- पाली, थाना- पतरातु, जिला- रामगढ़</p>
<p>Location</p>	<p>मौजा- पाली, थाना- पतरातु नं० ६४, खाता नं०- १०, ४६ प्लॉट नं०- ३९ अंश, ४० अंश, ४१ अंश, ४३ अंश, ४४ अंश, ४५ अंश</p>
<p>Area for Plantation as per Plan (Ha.)</p>	<p>०.२८</p>
<p>Number of Tree proposed in Mining Plan</p>	<p>७००</p>
<p>The authority will direct the concerned leases to carry out plantation in the safety zone as per provision in approved mining plan/EC/CTO within December, 2024.</p>	



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Ramgarh District Survey Report for Stone

Chapter – XXVII Other Information

27.1 Reference

Content as per Notification No.- S.O.3611 (E), dated: 25th July, 2018,	Status	Reference
(1) Introduction;	Complied In Chapter - I	Sub-Divisional Committee
(2) Overview of Mining Activity in the District;	Complied In Chapter - II	Old Approved DSR (Stone)
(3) General Profile of the District;	Complied In Chapter - III	Census Report, 2011 & District Statistical Handbook
(4) Geology of the District;	Complied In Chapter - IV	Department of Mines & Geology
(5) Drainage of Irrigation pattern;	Complied In Chapter - V	Old Approved DSR (Stone)
(6) Land Utilisation Pattern in the District: Forest, Agricultural, Horticultural, Mining etc.	Complied In Chapter - VI	Table No. 5.1 of District Statistical Handbook, Ramgarh (2021)
(7) Surface Water and Ground Water scenario of the district	Complied In Chapter - VII	Old Approved DSR (Stone) Water Resources Information System REPORT ON DYNAMIC GROUND WATER RESOURCE OF JHARKHAND (2020) Published in February, 2022 Prepared by; Central Ground Water Board State Unit Office, Ranchi / Mid-Eastern Region, Patna Dept of Water Resources, River Development & Ganga Rejuvenation Ministry of Jal Shakti, Government of India & Ground Water Directorate Water Resources Department, Ranchi, Government of Jharkhand
(8) Rainfall of the district and climatic condition;	Complied In Chapter - VIII	District Statistical Handbook, Ramgarh (2021) & Climate of Jharkhand, issued by Climatological



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Ramgarh District Survey Report for Stone

		<i>Publication Section of Indian Meteorological Department, Government of Jharkhand.</i>
(9) Details of the mining leases in the District as per the following format	Complied In Chapter - IX	District Mining Office
(10) Details of Royalty or Revenue received in last three years;	Complied In Chapter - X	District Mining Office
(11) Details of Production of Minor Mineral in last three years;	Complied In Chapter - XI	District Mining Office
(12) Mineral Map of the District;	Complied In Chapter - XII	Department of Mines & Geology
(13) List of Letter of Intent (LOI) Holders in the District along with its validity as per the following format:-	Complied In Chapter - XIII	District Mining Office
(14) Total Mineral Reserve available in the District;	Complied In Chapter - XIV	District Mining Office
(15) Quality /Grade of Mineral available in the District;	Complied In Chapter - XV	Department of Mines & Geology
(16) Use of Mineral;	Complied In Chapter - XVI	Sub-Divisional Committee
(17) Demand and Supply of the Mineral in the last three years;	Complied In Chapter - XVII	Department of Mines & Geology
(18) Mining leases marked on the map of the district;	Complied In Chapter - XVIII	Department of Mines & Geology
(19) details of the area of where there is a cluster of mining leases viz. number of mining leases, location (latitude and longitude);	Complied In Chapter - XIX	Department of Mines & Geology
(20) Details of Eco-Sensitive Area, if any, in the District;	Complied In Chapter - XX	Sub-Divisional Committee
(21) Impact on the Environment (Air, Water, Noise, Soil, Flora & Fauna, land use, agriculture, forest etc.) due to mining activity;	Complied In Chapter - XXI	Sub-Divisional Committee
(22) Remedial Measures to mitigate the impact of mining on the Environment;	Complied In Chapter - XXII	Sub-Divisional Committee



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Ramgarh District Survey Report for Stone

(23) Reclamation of Mined out area (best practice already implemented in the district, requirement as per rules and regulation, proposed reclamation plan);	Complied In Chapter – XXIII	Sub-Divisional Committee
(24) Risk Assessment & Disaster Management Plan;	Complied In Chapter – XXIV	Sub-Divisional Committee
(25) Details of the Occupational Health issues in the District. (Last five-year data of number of patients of Silicosis & Tuberculosis is also needs to be submitted);	Complied In Chapter – XXV	District TB Officer, Ramgarh
(26) Plantation and Green Belt development in respect of leases already granted in the District;	Complied In Chapter – XXVI	Sub-Divisional Committee
(27) Any other information.	Complied In Chapter - XXVII	

27.2 Public Consultation

The District Survey Report was prepared for Stone (Minor Mineral) in the District separately and its draft was placed in the public domain dated 20/10/2023 by keeping its copy in Collectorate and posting it on district's website for twenty-one days.

No comments/suggestions were received during the period of public consultation. This report is being recommended and forwarded to SEIAA from Sub-Divisional Committee, Ramgarh for its approval.

27.3 Other Information

Ramgarh district was declared as "Severally Pollution" based on the principal of Comprehensive Environmental Pollution Index (CEPI) by Central Pollution Control Board (CPCB) & National Green Tribunal (NGT).

On the direction of the CPCB, JSPCB has prepared an Action Plan to deal with pollution problems in the identified zones.

Broadly Jharkhand State Pollution Control Board (JSPCB) has identified Patratu Industrial Area & Ramgarh Industrial Area as Severally Pollution Area.

JSPCB has also observed that the different projects around the identified areas can be allowed to established with proper and effective pollution control measures as suggested in the Action Plan.



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LOCATION INDEX MAP



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जिला खनन कार्यालय, रामगढ़।

Email id : dmo-ramgarh@jharkhandmail.gov.in

पत्रांक ...12.6.1.../खनन, रामगढ़; दिनांक 12/12/2023

प्रेषक,

जिला खनन पदाधिकारी,
रामगढ़।

सेवा में,

क्षेत्रीय पदाधिकारी,
झारखण्ड राज्य प्रदूषण नियंत्रण पर्वद,
क्षेत्रीय कार्यालय, हजारीबाग।

विषय :-

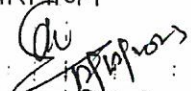
रामगढ़ जिला में अवस्थित ईकाईयों का परिवेशीय, वायु की गुणवत्ता का विश्लेषण प्रतिवेदन उपलब्ध कराने के संबंध में।

महाशय,

उपर्युक्त विषय विषय के संबंध में कहना है कि रामगढ़ जिलान्तर्गत लघु खनिज पत्थर का DSR किया जा रहा है जिसमें रामगढ़ जिला में अवस्थित ईकाईयों का परिवेशीय, वायु की गुणवत्ता का विश्लेषण प्रतिवेदन सम्मिलित किया जाना है। उल्लेखनीय है कि आप भी DSR की Sub Divisional Committee के सदस्य हैं।

अतः अनुरोध है कि उक्त प्रतिवेदन यथाशीघ्र उपलब्ध कराने की कृपा की जाय ताकि उसे DSR में शामिल किया जा सके।

विश्वासभाजन


जिला खनन पदाधिकारी,
रामगढ़।



D Letter nos other letter also


जिला खनन पदाधिकारी
रामगढ़

Fwd: Monitoring report of SDM Office & different Industries.

NITESH KUMAR GUPTA <dmo-ramgarh@jharkhandmail.gov.in>

From: "jspcb hazaribagh" <jspcb_hazaribagh@rediffmail.com>
To: dmoramgarh@gmail.com
Sent: Saturday, February 3, 2024 1:11:18 PM
Subject: Monitoring report of SDM Office & different Industries.

6 attachments

-  **SDO_Office__Ramgarh.pdf**
231K
-  **Jindal_Steel_3.2.24.pdf**
2486K
-  **Shree_Power.pdf**
2019K
-  **BFCL_3.2.24.pdf**
4906K
-  **Brahmputra_Metallic.pdf**
1586K
-  **Alok_Steel.pdf**
1000K





जिल्हा अन्न पदाधिकारी
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YUGANTAR BHARATI

ANALYTICAL & ENVIRONMENTAL ENGINEERING LABORATORY



Accredited by :- NABL accredited testing laboratory vide certificate Number TC-4032
 Jharkhand State Pollution Control Board (JSPCB)
 ISO 9001:2015 & ISO 45001:2018

TC-403

Test Certificate

ULR (Unique Lab Report) No.		T C 4 0 3 2 2 2 0 0 0 0 8 4 3 F									
Discipline	Chemical	Group	Atmospheric Pollution		Sample Description	Ambient Air Quality					
Report Release Date	23 rd May, 2022		Report ID		YBAEEL-220505-114227-A01						
W. Order/JSPCB App. No.	13130692		Work Order Date		04.05.2022						
Type of Industry (if any)	Sponge Iron Unit		Job code/ Ref. no.		YBAEEL/WA/LA/May-22/28						
Report issue to	M/s Alok Steels Industries Private Limited VII - Budhakhap, PO - Digwar, Ramgarh, Jharkhand.										
Sampling Period	18/05/2022- 19/05/2022		Mode of sample collection			By YBAEEL Team					
Sampling Protocol	IS:5182 and CPCB Air Manual Volume-1(NAAQM/36/2012-13)										
Sampling Locations	A. Near Main Gate				23°39'43.64"N, 85°33'15.00"E						
Meteorological Cond. of Field	W.C.- Partly Cloudy/Drizzling		RH % - 48		Temp. - 30°C		W.D.- West-East				
Sample receipt Date	19/05/2022		Analysis Started on		19/05/2022		Analysis completed on		21/05/2022		

*****Test Results*****

Parameters	Test Methods	Units	MU %	Sampling Location	Limits
				Site A	
Particulate matter (PM ₁₀)	IS:5182 (P-23):2006, RA 2017	µg/m ³	2.68	89.5	100
Particulate matter (PM _{2.5})	IS:5182 (P-24) 2019	µg/m ³	2.60	49.5	60
Sulphure Dioxide (SO ₂)	IS:5182 (P-2) 2004 RA 2017	µg/m ³	7.84	17.1	80
Nitrogen Dioxide (NO ₂)	IS:5182 (P-6) 2006 RA 2017	µg/m ³	4.17	37.0	80

*****End of Report*****

Limit is specified as	Environmental (Protection) Rule - 1986.
Abbreviation	MDL : Minimum detection limit. BDL : Below detection limit.
Env. Condition of Lab	Laboratory is maintaining, Temperature 27 ± 2°C and Relative Humidity 65 ± 5% in all testing areas as per IS 196:1966 (C).
Specific contractual notes	All values are expressed in as unit and results listed refer only to the tested sample and applicable parameter in Lab's Permanent Facility This report, in full or in part, shall not be used for advertising or as evidence in any court of law. This report cannot be reproduced, except when in full, without the written permission of the CEO. The samples collected shall be destroyed after 7 days from the date of issue of the certificate unless specified otherwise The liability of the laboratory is limited to the invoiced amount. All disputes are subjected to the Ranchi Jurisdiction.
Remarks	Samples comply with prescribed limits.

Sample Drawn By - Angad Munda
 Tested By - Amit Kumar Sinha (Lab Analyst)



Only CONCERN for
 Jharkhand State Pollution Control Board
 Application No. 13130692
 Allotted Date 04.05.2022
 Submission Date 23.05.22

Verified by Brij Nandan Kumar Section In-Charge	Issued by Umash Das Technical Manager
---	---

Authorized Signatory
 Atmospheric Pollution
 Yugantar Bharati Analytical &
 Environmental Engineering Laboratory

Technical Manager
 Yugantar Bharati Analytical &
 Environmental Engineering Laboratory

Branch Office :- Jamshedpur | Dhanbad | Hazaribag | Pakur

Main Office : Namkum Post Office, Sidroul, Ranchi - 834010, Jharkhand
 Ph : 09835-97960 098357-86677. Email - vbaeel@gmail.com. Web - https://ybaeel.in



जिवा खनन पदाधिकारी
 समग्र



INSTITUTE FOR ENVIRONMENTAL MANAGEMENT

ECO ENVIRO LAB

ISO 9001:2015 (QMS), ISO 45001:2018 (OHSAS); NABL & JSPCB Accreditation
2208/A, Jagannath Nagar, Pundag Road, Near Anand Gas Godown, Argora, Ranchi, Jharkhand - 834012.
Email ID - iem2012@rediffmail.com, Mob. No. - 8407804251, 8407804252, 8407804254.

Ambient Air Quality Test Report Near Induction Furnace

Client Name & Address: M/s - BFCL Industrial Area, Marar, P.O: Ramgarh, Dist.: Ramgarh Cantt., Jharkhand.	Type of Industry: Iron & Steel Industry Sample Description: Ambient Air Quality Sampling Date: 24/06/2021-25/06/2021 Sampling Location: Near Induction Furnace
Test Report No: IEM/EEL/RAN/BFCL/JUNE/AAQ/01 Report Issue Date: 30/06/2021 Protocol: IS Method & CPCB Guideline	Sample Code: 26062021-AAQ-01 Customer Rept.: Mr. Arjun Agrahari Sample Drawn By: Sumit Srivastava & team

METEROLOGICAL INFORMATION

Average Temp(°C)	Average Relative Humidity (%)	Average Barometric Pressure (mm of Hg)	Weather Condition	Wind Direction
28.4	76	730.3	Partly Sunny	SW

Sl. No.	Parameters	Test Method	Unit	Time Weighted Average	Sampling Date	CPCB Norms
					24-25/06/2021	
					Sampling Point	
					Near Main Gate	Result
1.	PM ₁₀	IS 5182 Part 23	µg/m ³	24 Hours		100
2.	PM _{2.5}	Lab SOP No.-02 based on CPCB Guideline	µg/m ³	24 Hours		60
3.	SO ₂	IS 5182 Part-02	µg/m ³	24 Hours		80
4.	NO ₂	IS 5182 Part-06	µg/m ³	24 Hours		80
5.	NH ₃	Method no 401, Air Sampling and Analysis, 3 rd Edition	µg/m ³	24 Hours		400
6.	OZONE	Method no 411, Air Sampling and Analysis, 3 rd Edition	µg/m ³	08 Hours		100
7.	ARSENIC	EPA Compendium Method IO-3.2 & APHA 22 nd Edition	ng/m ³	Annual		06
8.	LEAD	EPA Compendium Method IO-3.2 & APHA 22 nd Edition	µg/m ³	24 Hours		1.0
9.	NICKLE	EPA Compendium Method IO-3.2 & APHA 22 nd Edition	ng/m ³	Annual		20
10.	BENZENE	IS 5182 Part 11, GC	µg/m ³	Annual		05
11.	B (A) P	IS 5182 Part 12, USEPA Method TO-13	ng/m ³	Annual		01
12.	CO	IS 5182 Part 10 NDIR	mg/m ³	08 Hours		02

****End of Report****

Sahany
Tested by
Analyst

Sunil Kumar Singh
Checked By
(Sunil Kumar Singh)
Lab In-charge cum Technical Manager

Dr. S. C. Jain
Authorized Signatory
(Dr. S. C. Jain)
(Director & QC Manager)

Note:-1. The results refer only to the tested sample of applicable parameters. 2. The sample will be preserved for a maximum of 7 days on request from the date of issue of the certificate. 3. The certificate shall not be reproduced in part or full and can't be used as evidence or in court of law without prior permission in writing. 4. All disputes are subjected to the Ranchi jurisdiction.



जिम्मा खानन पदाधिकार
समगद

INSTITUTE FOR ENVIRONMENTAL MANAGEMENT ECO ENVIRO LAB

ISO 9001:2015 (QMS), ISO 45001:2018 (OHSAS); NABL & JSPCB Accreditation
2208/A, Jagannath Nagar, Pundag Road, Near Anand Gas Godown, Argora, Ranchi, Jharkhand - 834012.
Email ID - iem2012@Rediffmail.com, Mob. No. - 8407804251, 8407804252, 8407804254.

Ambient Air Quality Test Report Near School

Client Name & Address: M/s - BFCL Industrial Area, Marar, P.O: Ramgarh, Dist. Ramgarh Cantt., Jharkhand.	Type of Industry: Iron & Steel Industry Sample Description: Ambient Air Quality Sampling Date: 24/06/2021-25/06/2021 Sampling Location: Near School
Test Report No: IEM/EEL/RAN/BFCL/JUNE/AAQ/04 Report Issue Date: 30/06/2021 Protocol: IS Method & CPCB Guideline	Sample Code: 26062021-AAQ-04 Customer Rept.: Mr. Arjun Agrahari Sample Drawn By: Sumit Srivastava & team

METEROLOGICAL INFORMATION

Average Temp(°C)	Average Relative Humidity (%)	Average Barometric Pressure (mm of Hg)	Weather Condition	Wind Direction
28.4	76	730.3	Partly Sunny	SW

Sl. No.	Parameters	Test Method	Unit	Time Weighted Average	Sampling Date 24-25/06/2021	CPCB Norms
					Near Main Gate	
1.	PM ₁₀	IS 5182 Part 23	µg/m ³	24 Hours	70.5	100
2.	PM _{2.5}	Lab SOP No.-02 based on CPCB Guideline	µg/m ³	24 Hours	39.1	60
3.	SO ₂	IS 5182 Part-02	µg/m ³	24 Hours	21.5	80
4.	NO ₂	IS 5182 Part-06	µg/m ³	24 Hours	15.4	80
5.	NH ₃	Method no 401, Air Sampling and Analysis, 3 rd Edition	µg/m ³	24 Hours	28.68	400
6.	OZONE	Method no 411, Air Sampling and Analysis, 3 rd Edition	µg/m ³	08 Hours	24.6	100
7.	ARSENIC	EPA Compendium Method IO-3.2 & APHA 22 nd Edition	ng/m ³	Annual	<0.4	06
8.	LEAD	EPA Compendium Method IO-3.2 & APHA 22 nd Edition	µg/m ³	24 Hours	<0.04	1.0
9.	NICKLE	EPA Compendium Method IO-3.2 & APHA 22 nd Edition	ng/m ³	Annual	<0.7	20
10.	BENZENE	IS 5182 Part 11, GC	µg/m ³	Annual	<01	05
11.	B (A) P	IS 5182 Part 12, USEPA Method TO -13	ng/m ³	Annual	<01	01
12.	CO	IS 5182 Part-10 NDIR	mg/m ³	08 Hours	0.50	02

****End of Report****

Tested by
Analyst

Checked By
(Sunil Kumar Singh)
Lab In-charge cum Technical Manager

Authorized Signatory
(Dr. S. C. Jain)
(Director & QC Manager)

Note:- 1. The results refer only to the tested sample of applicable parameters. 2. The sample will be preserved for a maximum of 7 days on request from the date of issue of the certificate. 3. The certificate shall not be reproduced in part or full and can't be used as evidence or in court of law without prior permission in writing. 4. All disputes are subjected to the Ranchi jurisdiction.



Signature
जिन्ना खनन पदाधिकारी
रामगढ़

INSTITUTE FOR ENVIRONMENTAL MANAGEMENT
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ISO 9001:2015 (QMS), ISO 45001:2018 (OHSAS); NABL & JSPCB Accreditation
2208/A, Jagannath Nagar, Pundag Road, Near Anand Gas Godown, Argora, Ranchi, Jharkhand - 834012.
Email ID - iem2012@rediffmail.com, Mob. No. - 8407804251, 8407804252, 8407804254.

Ambient Air Quality Test Report
Near New Office

Client Name & Address: M/s - BFCL Industrial Area, Marar, P.O: Ramgarh, Dist.: Ramgarh Cantt., Jharkhand	Type of Industry: Iron & Steel Industry Sample Description: Ambient Air Quality Sampling Date: 23/06/2021-24/06/2021 Sampling Location: Near New Office
Test Report No: IEM/EEL/RAN/BFCL/JUNE/AAQ/03 Report Issue Date: 30/06/2021 Protocol: IS Method & CPCB Guideline	Sample Code: 26062021-AAQ-03 Customer Rept.: Mr. Arjun Agrahari Sample Drawn By: Sumit Srivastava & team

METEROLOGICAL INFORMATION

Average Temp(°C)	Average Relative Humidity (%)	Average Barometric Pressure (mm of Hg)	Weather Condition	Wind Direction
28	78	730.5	Partly Sunny	SW

Sl. No.	Parameters	Test Method	Unit	Time Weighted Average	Sampling Date	Near Main Gate Result	CPCB Norms
					Sampling Point		
1.	PM ₁₀	IS 5182 Part 23	µg/m ³	24 Hours		71.55	100
2.	PM _{2.5}	Lab SOP No.-02 based on CPCB Guideline	µg/m ³	24 Hours		38.6	60
3.	SO ₂	IS 5182 Part-02	µg/m ³	24 Hours		22.06	80
4.	NO ₂	IS 5182 Part-06	µg/m ³	24 Hours		14.5	80
5.	NH ₃	Method no 401, Air Sampling and Analysis, 3 rd Edition	µg/m ³	24 Hours		27.4	400
6.	OZONE	Method no 411, Air Sampling and Analysis, 3 rd Edition	µg/m ³	08 Hours		17.4	100
7.	ARSENIC	EPA Compendium Method IO-3.2 & APHA 22 nd Edition	ng/m ³	Annual		<0.4	06
8.	LEAD	EPA Compendium Method IO-3.2 & APHA 22 nd Edition	µg/m ³	24 Hours		<0.04	1.0
9.	NICKLE	EPA Compendium Method IO-3.2 & APHA 22 nd Edition	ng/m ³	Annual		<0.7	20
10.	BENZENE	IS 5182 Part 11, GC	µg/m ³	Annual		<01	05
11.	B (A) P	IS 5182 Part 12, USEPA Method TO -13	ng/m ³	Annual		<01	01
12.	CO	IS 5182 Part 10 NDIR	mg/m ³	08 Hours		0.68	02

****End of Report****

Tested by
Analyst

Checked By
(Sunil Kumar Singh)
Lab In-charge cum Technical Manager

Authorized Signatory
(Dr. S. G. Jais)(Director & QC Manager)

Notes:-1. The results refer only to the tested sample of applicable parameters. 2. The sample will be preserved for a maximum of 7 days on request from the date of issue of the certificate. 3. The certificate shall not be reproduced in part or full and can't be used as evidence or in court of law without prior permission in writing. 4. All disputes are subjected to the Ranchi jurisdiction.

Approved
Jharkhand, Ranchi

जिम्मा खनन पदाधिकार:
रामगढ़



INSTITUTE FOR ENVIRONMENTAL MANAGEMENT

ECO ENVIRO LAB

ISO 9001:2015 (QMS), ISO 45001:2018 (OHSAS); NABL & JSPCB Accreditation
2208/A, Jagannath Nagar, Pundag Road, Near Anand Gas Godown, Argora, Ranchi, Jharkhand - 834012.
Email ID - iem2012@rediffmail.com, Mob. No. - 8407804251, 8407804252, 8407804254.

Ambient Air Quality Test Report Near Main Gate

Client Name & Address: M/s - BFCL Industrial Area, Marar, P. O: Ramgarh, Dist: Ramgarh Cantt., Jharkhand.	Type of Industry: Iron & Steel Industry Sample Description: Ambient Air Quality Sampling Date: 22/06/2021-23/06/2021 Sampling Location: Near Main Gate
Test Report No: IEM/EEL/RAN/BFCL/JUNE/AAQ/02 Report Issue Date: 30/06/2021 Protocol: IS Method & CPCB Guideline	Sample Code: 26062021-AAQ-02 Customer Rept.: Mr. Arjun Agrahari Sample Drawn By: Sumit Srivastava & team

METEROLOGICAL INFORMATION

Average Temp(°C)	Average Relative Humidity (%)	Average Barometric Pressure (mm of Hg)	Weather Condition	Wind Direction
28	78	729.6	Partly Sunny	SW

Sl. No.	Parameters	Test Method	Unit	Time Weighted Average	Sampling Date	CPCB Norms
					Sampling Point	
1.	PM ₁₀	IS 5182 Part 23	µg/m ³	24 Hours	22-23/06/2021 Near Main Gate 73.9	100
2.	PM _{2.5}	Lab SOP No.-02 based on CPCB Guideline	µg/m ³	24 Hours	42.1	60
3.	SO ₂	IS 5182 Part-02	µg/m ³	24 Hours	25.4	80
4.	NO ₂	IS 5182 Part-06	µg/m ³	24 Hours	16.4	80
5.	NH ₃	Method no 401, Air Sampling and Analysis, 3 rd Edition	µg/m ³	24 Hours	26.6	400
6.	OZONE	Method no 411, Air Sampling and Analysis, 3 rd Edition	µg/m ³	08 Hours	23.4	100
7.	ARSENIC	EPA Compendium Method IO-3.2 & APHA 22 nd Edition	ng/m ³	Annual	<0.4	06
8.	LEAD	EPA Compendium Method IO-3.2 & APHA 22 nd Edition	µg/m ³	24 Hours	<0.04	1.0
9.	NICKLE	EPA Compendium Method IO-3.2 & APHA 22 nd Edition	ng/m ³	Annual	<0.7	20
10.	BENZENE	IS 5182 Part 11, GC	µg/m ³	Annual	<01	05
11.	B (A) P	IS 5182 Part 12, USEPA Method TO -13	ng/m ³	Annual	<01	01
12.	CO	IS 5182 Part 10 NDIR	mg/m ³	08 Hours	0.65	02

****End of Report****

Satyam
Tested by
Analyst

Checked By
(Sunil Kumar Singh)
Lab In-charge cum Technical Manager

Authorized Signatory
(Dr. S. C. Jain)
(Director & QC Manager)

Note:-1. The results refer only to the tested sample of applicable parameters. 2. The sample will be preserved for a maximum of 7 days on request from the date of issue of the certificate. 3. The certificate shall not be reproduced in part or full and can't be used as evidence or in court of law without prior permission in writing. 4. All disputes are subjected to the Ranchi jurisdiction.



जिन्ना खनन पदाधिकारः
रामगढ़



Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051 (Haryana)
ISO 9001 | ISO 14001 | ISO 45001

Test Report

Sample Number: VEL/BML/A/01
Name & Address of the Party: M/s Brahmputra Metallics Ltd.
Village: Kamta, Block- Gola,
Distt.-Ramgarh, Jharkhand
Latitude: 23° 31' 52.39"N
Longitude: 85° 41' 48.67"E

Report No.: VEL/A/2205/25/001
Format No.: 7.8.F-01
Party Reference No.: NIL
Reporting Date: 30/05/2022
Period of Analysis: 25/05/2022- 30/05/2022
Receipt Date: 25/05/2022

Sample Description: AMBIENT AIR QUALITY MONITORING

General Information:-

Sample collected by: Vardan EnviroLab Representative
Sampling Location: Near Reservoir
Instrument Used: RDS & FPS sampler with all Accessories
Instrument Code: VEL/RDS/02 & VEL/FPS/02
Instrument Calibration Status: Calibrated
Meteorological condition during monitoring: Cloudy Sky
Date of Monitoring: 22/05/2022 to 23/05/2022
Time of Monitoring: 09:30 AM - 09:30 AM
Ambient Temperature (°C): Min. 28.0 °C Max. 40.0 °C
Surrounding Activity: Human & Vehicular Activities
Scope of Monitoring: Regulatory Requirement
Control measure if Any: No
Sampling & Analysis Protocol: IS-5182 & CPCB Guide lines
Parameter Required: As per client requirement.

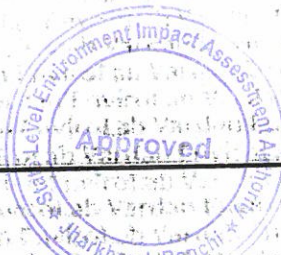
Vardan EnviroLab Representative

Near Reservoir
RDS & FPS sampler with all Accessories
VEL/RDS/02 & VEL/FPS/02
Calibrated
Cloudy Sky
22/05/2022 to 23/05/2022
09:30 AM - 09:30 AM
Min. 28.0 °C Max. 40.0 °C
Human & Vehicular Activities
Regulatory Requirement
No
IS-5182 & CPCB Guide lines
As per client requirement.

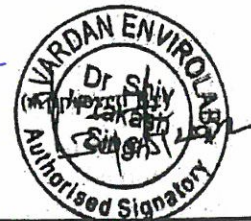
S.No.	Parameter	Protocol	Result	Unit	Limit
1.	Particulate Matter (PM _{2.5})	"SOP No. VEL/SOP/01, Section No. SP 63	59.12	µg/m ³	60
2.	Particulate Matter (PM ₁₀)	IS: 5182 (P-23) Gravimetric Method	88.12	µg/m ³	100
3.	Nitrogen Dioxide (NO ₂)	IS: 5182 (P-6) Jacob & Hochheiser	25.45	µg/m ³	80
4.	Sulphur Dioxide (SO ₂)	IS: 5182 (P-2) Modified West and Gaeke	10.22	µg/m ³	80
5.	Carbon Monoxide (CO)	IS: 5182 (P-10) Gas Chromatography	0.76	mg/m ³	4
6.	Ammonia (NH ₃), µg/m ³	APHA, Indo Phenol Blue Method	8.45	µg/m ³	400
7.	Lead (Pb), µg/m ³	IS: 5182 (P-22) Air Acetylene Method	**BDL (*DL 0.05 µg/m ³)	µg/m ³	1
8.	Benzene (C ₆ H ₆), µg/m ³	IS: 5182 (P-11)	**BDL (*DL 2.0 µg/m ³)	µg/m ³	05
9.	Benzo(a)pyrene, ng/m ³	IS: 5182 (P-12)	**BDL (*DL 0.5 ng/m ³)	ng/m ³	01
10.	Ozone (O ₃), µg/m ³	IS: 5182 (P-9) Colorimetric Method	26.98	µg/m ³	180
11.	Arsenic As, ng/m ³	IS: 5182 (P-22)	**BDL (*DL 1.0ng/m ³)	ng/m ³	6
12.	Nickel Ni, ng/m ³	IS: 5182 (P-22) Air Acetylene Method	**BDL (*DL 5.0ng/m ³)	ng/m ³	20

Note: (i) NAAQS - National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 18.11.2009.
(ii) SOP- Laboratory Standard Operating Procedure, **BDL- Below Detection Limit, *DL- Detection Limit

SUSAN SHEKHAWAT
DY. BIOLOGICAL MANAGER



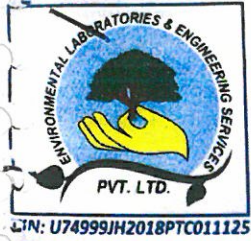
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www.vardan

Ph: 0124-4343750/752/753, 9810355569, 9953147268 E-mail: lab@vardan.co.in, bd@vardan.co.in

बिष्वा खनन पदाधिकार:
समगद



ENVIRONMENTAL LABORATORIES &

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PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA
HATIA, RANCHI-834003 (JHARKHAND)
GST NO:- 20AAECE9713D1Z4

Email: info@elespl.co.in, eles.ranchi@gmail.com
Phone no.: 0651-2290103
Website : www.elespl.co.in



TC-8839

TEST REPORT

Test Report No. : ELES/RNC/2023/4221	Report Release Date : 07.11.2023
Work Order No. : 4571507744	Work Order Date : 14.02.2023
ULR No. : TC883923000002641F	

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: M/s Jindal Steel and Power Limited	Sample Ref. No.	: ELES/RNC/2023/AA/3695
Address	: Gribraj, Balkudra, Patratu, Ramgarh- 829143, Jharkhand.	Location	: Dhorhora Gate
Plant Status	: Operational	Sampling Date	: 03.10.2023 to 04.10.2023
Period of Analysis	: 05.10.2023 to 18.10.2023	Sample Received Date	: 05.10.2023
		Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 28	2	Barometric Pressure (mmHg)	: 735
3	Relative Humidity (%)	: 60	4	Weather Condition	: Clear
5	Longitude	: 85°19'53.96"E	6	Latitude	: 23°37'52.12"N

NABL Accredited				
Discipline : Chemical			Group : Atmospheric Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	56	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	31	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	5.9	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	23.6	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)

Reviewed by
Asish Kumar

Approved
Level 1 Environment Impact Assessment Authority
Jharkhand

Asish

Dr. Deependra Kumar Sinha

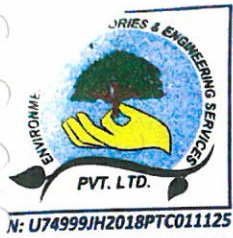
Authorised Signatory
Dr. Deependra Kumar Sinha
Ph. D. Environmental Engg
ELES Pvt. Ltd. Technical Manager

****End of Report****

Page 1 of 1

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रामगढ़



ENVIRONMENTAL LABORATORIES &

PLOT NO-30, MANSAROVAR ENCLAVE, TUPUDANA
HATIA, RANCHI-834003 (JHARKHAND)
GST NO:- 20AAECE9713D1Z4

ENGINEERING SERVICES PVT. LTD.

Email: info@elespl.co.in, eles.ranchi@gmail.com
Phone no.: 0651-2290103
Website : www.elespl.co.in



TC-8839

N: U74999JH2018PTC011125

TEST REPORT

Test Report No. : ELES/RNC/2023/4220	Report Release Date : 07.11.2023
Work Order No. : 4571507744	Work Order Date : 14.02.2023
ULR No. : TC883923000002640F	

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: M/s Jindal Steel and Power Limited	Sample Ref. No.	: ELES/RNC/2023/AA/3694
Address	: Gribraj, Balkudra, Patratu, Ramgarh- 829143, Jharkhand.	Location	: Jindal School Sector- 2
Plant Status	: Operational	Sampling Date	: 03.10.2023 to 04.10.2023
Period of Analysis	: 05.10.2023 to 18.10.2023	Sample Received Date	: 05.10.2023
		Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sample Drawn By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION					
1	Average Temperature (°C)	: 28	2	Barometric Pressure (mmHg)	: 735
3	Relative Humidity (%)	: 60	4	Weather Condition	: Clear
5	Longitude	: 85°19'51.08"E	6	Latitude	: 23°37'32.40"N

NABL Accredited				
Discipline : Chemical			Group : Atmospheric Pollution	
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	61	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part- 24): 2019	34	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	8.8	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	25.9	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part- 25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	0.005	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)

Reviewed by

Approved
****End of Report****

Authorized Signatory
Dr. D. Environmental Engg.
ELES Pvt. Ltd.

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HATIA, RANCHI-834003 (JHARKHAND)
GST NO:- 20AAECE9713D124

Email: info@elespl.co.in, eles.ranchi@gmail.com
Phone no.: 0651-2290103
Website : www.elespl.co.in



TC-8839

TEST REPORT

Test Report No. : ELES/RNC/2024/0042	Report Release Date : 08.01.2024
Work Order No. : 4571507744	Work Order Date : 14.02.2023
ULR No. : TC88392400000042F	

CUSTOMER DETAILS		SAMPLE DETAILS	
Customer Name	: M/s Jindal Steel and Power Limited	Sample Ref. No.	: ELES/RNC/2023/AA/4382
Address	: Gribraj, Balkudra, Patratu, Ramgarh- 829143, Jharkhand.	Location	: Dhorhora Gate
Plant Status	: Operational	Sampling Date	: 01.12.2023 to 02.12.2023
Period of Analysis	: 04.12.2023 to 16.12.2023	Sample Received Date	: 04.12.2023
		Type of Sample	: Ambient Air
		Sampling Procedure	: ELES/DOC/SMPL/02
		Sampling Done By	: ELES Pvt. Ltd.
		Sample Condition	: Sealed & Preserved

METEOROLOGICAL INFORMATION

1	Average Temperature (°C) : 19	2	Barometric Pressure (mmHg) : 735
3	Relative Humidity (%) : 48	4	Weather Condition : Clear
5	Longitude : 85°19'53.96"E	6	Latitude : 23°37'52.12"N

Discipline : Chemical		Group : Atmospheric Pollution		
Parameter	Unit	Test Protocol	Result	Regulatory Limit
Particulate Matter (PM10)	µg/m ³	IS 5182 (Part-23): 2006; RA2022	58	100 (24hrs)
Particulate Matter (PM2.5)	µg/m ³	IS 5182 (Part-24): 2019	29	60 (24hrs)
Sulphur Di-Oxide (SO ₂)	µg/m ³	IS 5182 (Part-2): 2001; RA2022	5.9	80 (24hrs)
Nitrogen Di-Oxide (NO ₂)	µg/m ³	IS 5182 (Part-6): 2006; RA2022	17.3	80 (24hrs)
Ozone (O ₃)	µg/m ³	IS 5182 (Part-9): 1974; RA2019	<20.0	100 (8hrs)
Ammonia (NH ₃)	µg/m ³	IS 5182 (Part-25): 2018	<10.0	400 (24hrs)
Carbon Monoxide (CO)	mg/m ³	IS 5182 (Part-10): 1999; RA2019	<1.0	2 (8hrs)
Lead (Pb)	µg/m ³	IS 5182 (Part-22): 2004; RA2019	<0.002	1 (24hrs)
Nickel (Ni)	ng/m ³	IS 5182 (Part-26):2020	<6.0	20 (Annual)
Arsenic (As)	ng/m ³	ELES/AIR/SOP/01	<2.0	06 (Annual)



जिज्ञा खनन पदाधिकार
समगद

****End of Report****

Dr. Deependra Kumar Sinha

Dr. Deependra Kumar Sinha
Ph. D Environmental Engg.
ELES Pvt. Ltd. Technical Manager

Page 1 of 1

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Real Time Data Acquisition And Monitoring

Site Name: SDO_OFFICE_CAAQMS-Ramgarh

Report: Custom Report

From Date: 2023/08/26 00:00:00 To Date : 2023/09/27 23:59:05

Description	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
Prescribed Standards	0 - 100	0 - 60	0 - 80	0 - 4	0 - 80
Maximum Data	70.05	130.76	16.45	198.9	9.0
Minimum Data	0.0	9.34	0.0	0.0	0.0
Geometric Mean	21.81	14.87	16.21	2.87	8.92
Median	12.17	9.34	16.45	0.47	9.0
Standard Deviation	18.11	19.14	1.42	13.54	0.63
Maximum Value At Time	2023-09-26 16	2023-08-27 14	2023-08-26 00	2023-08-26 04	2023-08-26 00
Minimum Value At Time	2023-09-22 15	2023-08-29 17	2023-08-28 10	2023-08-27 08	2023-08-28 10
Valid Data Points	36	752	757	788	754
Total Data Points	792	792	792	792	792
Data Availability %	4.55%	94.95%	95.58%	99.49%	95.2%

SI No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
1	2023-08-26 00	NA	18.68	16.45	2.01	9.00
2	2023-08-26 01	NA	18.68	16.45	1.83	9.00
3	2023-08-26 02	NA	18.68	16.45	1.97	9.00
4	2023-08-26 03	NA	18.68	16.45	15.79	9.00
5	2023-08-26 04	NA	18.68	16.45	198.90	9.00
6	2023-08-26 05	NA	28.02	3.52	0.96	2.51



AS
 जिला स्तरीय पर्यावरण प्रदूषण नियंत्रण समिति
 रामगढ़

SI No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
7	2023-08-26 06	NA	28.02	16.45	13.28	9.00
8	2023-08-26 07	NA	28.02	16.45	22.72	9.00
9	2023-08-26 08	NA	37.36	3.21	0.70	2.36
10	2023-08-26 09	NA	37.36	16.45	11.91	9.00
11	2023-08-26 10	NA	46.20	11.28	14.45	5.84
12	2023-08-26 11	NA	74.72	11.09	0.52	6.51
13	2023-08-26 12	NA	74.72	16.45	1.16	9.00
14	2023-08-26 13	NA	74.72	16.45	1.22	9.00
15	2023-08-26 14	NA	74.72	16.45	1.05	9.00
16	2023-08-26 15	NA	74.72	16.45	0.87	9.00
17	2023-08-26 16	NA	74.72	16.45	1.13	9.00
18	2023-08-26 17	NA	78.64	10.42	0.99	5.81
19	2023-08-26 18	NA	84.06	16.45	1.08	9.00
20	2023-08-26 19	NA	84.96	15.08	1.30	8.14
21	2023-08-26 20	NA	93.40	10.79	0.65	6.49
22	2023-08-26 21	NA	NA	NA	NA	NA
23	2023-08-26 22	NA	102.74	9.45	0.84	5.62



जिम्मा खनन पदाधिकारी
समगड

SI No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
24	2023-08-26 23	NA	102.74	16.45	1.54	9.00
25	2023-08-27 00	NA	102.74	16.45	1.95	9.00
26	2023-08-27 01	NA	102.74	16.45	2.05	9.00
27	2023-08-27 02	NA	NA	NA	NA	NA
28	2023-08-27 03	NA	112.08	4.31	0.83	2.93
29	2023-08-27 04	NA	112.08	16.45	1.59	9.00
30	2023-08-27 05	NA	112.08	16.45	2.01	9.00
31	2023-08-27 06	NA	112.08	16.45	2.21	9.00
32	2023-08-27 07	NA	112.08	16.45	14.16	9.00
33	2023-08-27 08	NA	112.08	16.45	0.00	9.00
34	2023-08-27 09	NA	NA	NA	NA	NA
35	2023-08-27 10	NA	121.42	12.83	29.12	7.20
36	2023-08-27 11	NA	121.42	16.45	0.00	9.00
37	2023-08-27 12	NA	121.42	16.45	0.00	9.00
38	2023-08-27 13	NA	127.18	11.73	0.72	6.61
39	2023-08-27 14	NA	130.76	16.45	2.97	9.00
40	2023-08-27 15	NA	130.76	16.45	3.35	9.00



जिल्हा खानन पदाधिकारी
समगढ़

Sl No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
41	2023-08-27 16	NA	57.68	16.45	2.96	9.00
42	2023-08-27 17	NA	11.31	13.09	2.54	7.11
43	2023-08-27 18	NA	17.00	13.16	1.11	7.92
44	2023-08-27 19	NA	18.68	16.45	0.60	9.00
45	2023-08-27 20	NA	18.68	16.45	0.87	9.00
46	2023-08-27 21	NA	18.68	16.45	0.84	9.00
47	2023-08-27 22	NA	18.68	16.45	0.94	9.00
48	2023-08-27 23	NA	18.68	16.45	1.20	9.00
49	2023-08-28 00	NA	18.68	16.45	28.35	9.00
50	2023-08-28 01	NA	18.68	16.45	14.07	9.00
51	2023-08-28 02	NA	18.68	16.45	122.46	9.00
52	2023-08-28 03	NA	18.68	16.45	4.12	9.00
53	2023-08-28 04	NA	18.68	16.45	4.60	9.00
54	2023-08-28 05	NA	18.68	16.45	4.50	9.00
55	2023-08-28 06	NA	18.68	16.45	3.88	9.00
56	2023-08-28 07	NA	28.02	7.68	0.66	4.60



जिला स्तरीय पर्यावरण प्रभाव आकलन प्राधिकारी
रामगढ़

SI No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
57	2023-08-28 08	NA	28.02	16.45	1.43	9.00
58	2023-08-28 09	NA	NA	NA	NA	NA
59	2023-08-28 10	NA	43.11	0.00	0.63	0.00
60	2023-08-28 11	NA	37.49	10.45	81.23	6.20
61	2023-08-28 12	NA	46.70	9.91	12.98	5.90
62	2023-08-28 13	NA	46.70	16.45	53.62	9.00
63	2023-08-28 14	NA	50.81	12.01	0.23	6.75
64	2023-08-28 15	NA	56.04	16.45	0.55	9.00
65	2023-08-28 16	NA	56.04	16.45	0.62	9.00
66	2023-08-28 17	NA	56.04	16.45	0.44	9.00
67	2023-08-28 18	NA	56.04	16.45	0.36	9.00
68	2023-08-28 19	NA	56.04	16.45	0.40	9.00
69	2023-08-28 20	NA	56.04	16.45	0.55	9.00
70	2023-08-28 21	NA	56.04	16.45	0.60	9.00
71	2023-08-28 22	NA	56.04	16.45	1.19	9.00
72	2023-08-28 23	NA	56.04	16.45	1.28	9.00
73	2023-08-29 00	NA	56.04	16.45	0.65	9.00



AS
जिला स्तरन पदाधिकारी
रामगढ़

Sl No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
74	2023-08-29 01	NA	56.04	16.45	0.58	9.00
75	2023-08-29 02	NA	56.04	16.45	0.35	9.00
76	2023-08-29 03	NA	56.04	16.45	0.17	9.00
77	2023-08-29 04	NA	56.04	16.45	0.16	9.00
78	2023-08-29 05	NA	56.04	16.45	0.39	9.00
79	2023-08-29 06	NA	56.04	16.45	0.24	9.00
80	2023-08-29 07	NA	56.04	16.45	0.14	9.00
81	2023-08-29 08	NA	56.04	16.45	0.16	9.00
82	2023-08-29 09	NA	56.04	16.45	0.29	9.00
83	2023-08-29 10	NA	56.04	16.45	0.35	9.00
84	2023-08-29 11	NA	56.04	16.45	0.50	9.00
85	2023-08-29 12	NA	56.04	16.45	0.65	9.00
86	2023-08-29 13	NA	56.04	16.45	0.98	9.00
87	2023-08-29 14	NA	56.04	16.45	1.46	9.00
88	2023-08-29 15	NA	56.04	16.45	1.19	9.00
89	2023-08-29 16	NA	28.02	16.45	1.11	9.00
90	2023-08-29 17	NA	9.34	16.45	1.05	9.00



जिम्मा खनन पदाधिकारी
रामगढ

SI No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
91	2023-08-29 18	NA	9.34	16.45	1.07	9.00
92	2023-08-29 19	NA	9.34	16.45	0.99	9.00
93	2023-08-29 20	NA	9.34	16.45	0.91	9.00
94	2023-08-29 21	NA	9.34	16.45	0.86	9.00
95	2023-08-29 22	NA	9.34	16.45	1.12	9.00
96	2023-08-29 23	NA	9.34	16.45	1.18	9.00
97	2023-08-30 00	NA	9.34	16.45	0.85	9.00
98	2023-08-30 01	NA	9.34	16.45	0.70	9.00
99	2023-08-30 02	NA	9.34	16.45	0.41	9.00
100	2023-08-30 03	NA	9.34	16.45	0.46	9.00
101	2023-08-30 04	NA	9.34	16.45	0.33	9.00
102	2023-08-30 05	NA	9.34	16.45	0.34	9.00
103	2023-08-30 06	NA	9.34	16.45	0.29	9.00
104	2023-08-30 07	NA	9.34	16.45	0.18	9.00
105	2023-08-30 08	NA	9.34	16.45	0.22	9.00
106	2023-08-30 09	NA	9.34	16.45	0.28	9.00
107	2023-08-30 10	NA	9.34	16.45	0.34	9.00



जिला खनन पदाधिकारी
रामगढ़

SI No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
108	2023-08-30 11	NA	9.34	16.45	0.53	9.00
109	2023-08-30 12	NA	9.34	16.45	0.75	9.00
110	2023-08-30 13	NA	9.34	16.45	1.21	9.00
111	2023-08-30 14	NA	9.34	16.45	1.92	9.00
112	2023-08-30 15	NA	9.34	16.45	1.79	9.00
113	2023-08-30 16	NA	9.34	16.45	1.52	9.00
114	2023-08-30 17	NA	9.34	16.45	1.95	9.00
115	2023-08-30 18	NA	9.34	16.45	1.22	9.00
116	2023-08-30 19	NA	9.34	16.45	1.40	9.00
117	2023-08-30 20	NA	9.34	16.45	1.88	9.00
118	2023-08-30 21	NA	9.34	16.45	2.15	9.00
119	2023-08-30 22	NA	9.34	16.45	1.31	9.00
120	2023-08-30 23	NA	9.34	16.45	1.03	9.00
121	2023-08-31 00	NA	9.34	16.45	0.83	9.00
122	2023-08-31 01	NA	9.34	16.45	0.54	9.00
123	2023-08-31 02	NA	9.34	16.45	0.63	9.00
124	2023-08-31 03	NA	9.34	16.45	0.58	9.00



जिल्हा खानन पदाधिकारी
रामगढ

SI No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
125	2023-08-31 04	NA	9.34	16.45	0.44	9.00
126	2023-08-31 05	NA	9.34	16.45	0.28	9.00
127	2023-08-31 06	NA	9.34	16.45	0.19	9.00
128	2023-08-31 07	NA	9.34	16.45	0.15	9.00
129	2023-08-31 08	NA	9.34	16.45	0.14	9.00
130	2023-08-31 09	NA	9.34	16.45	0.14	9.00
131	2023-08-31 10	NA	9.34	16.45	0.27	9.00
132	2023-08-31 11	NA	9.34	16.45	0.42	9.00
133	2023-08-31 12	NA	9.34	16.45	0.71	9.00
134	2023-08-31 13	NA	9.34	16.45	1.12	9.00
135	2023-08-31 14	NA	9.34	16.45	0.58	9.00
136	2023-08-31 15	NA	9.34	16.45	0.25	9.00
137	2023-08-31 16	NA	9.34	16.45	0.29	9.00
138	2023-08-31 17	NA	9.34	16.45	0.18	9.00
139	2023-08-31 18	NA	9.34	16.45	0.24	9.00
140	2023-08-31 19	NA	9.34	16.45	0.20	9.00
141	2023-08-31 20	NA	9.34	16.45	0.24	9.00



जिला स्तरन पदाधिकारी
रामगढ़

SI No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
142	2023-08-31 21	NA	9.34	16.45	0.29	9.00
143	2023-08-31 22	NA	9.34	16.45	0.97	9.00
144	2023-08-31 23	NA	9.34	16.45	1.53	9.00
145	2023-09-01 00	NA	9.34	16.45	1.86	9.00
146	2023-09-01 01	NA	9.34	16.45	2.01	9.00
147	2023-09-01 02	NA	9.34	16.45	1.66	9.00
148	2023-09-01 03	NA	9.34	16.45	1.66	9.00
149	2023-09-01 04	NA	9.34	16.45	1.53	9.00
150	2023-09-01 05	NA	9.34	16.45	1.43	9.00
151	2023-09-01 06	NA	9.34	16.45	1.40	9.00
152	2023-09-01 07	NA	9.34	16.45	1.21	9.00
153	2023-09-01 08	NA	9.34	16.45	1.18	9.00
154	2023-09-01 09	NA	9.34	16.45	1.37	9.00
155	2023-09-01 10	NA	9.34	16.45	1.21	9.00
156	2023-09-01 11	NA	9.34	16.45	0.58	9.00
157	2023-09-01 12	NA	9.34	16.45	0.61	9.00



जिल्हा खनन पदाधिकारी
रामगढ

SI No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
158	2023-09-01 13	NA	9.34	16.45	0.51	9.00
159	2023-09-01 14	NA	9.34	16.45	0.54	9.00
160	2023-09-01 15	NA	9.34	16.45	0.50	9.00
161	2023-09-01 16	NA	9.34	16.45	0.46	9.00
162	2023-09-01 17	NA	9.34	16.45	0.63	9.00
163	2023-09-01 18	NA	9.34	16.45	0.50	9.00
164	2023-09-01 19	NA	9.34	16.45	0.49	9.00
165	2023-09-01 20	NA	9.34	16.45	0.86	9.00
166	2023-09-01 21	NA	9.34	16.45	0.97	9.00
167	2023-09-01 22	NA	9.34	16.45	1.22	9.00
168	2023-09-01 23	NA	9.34	16.45	1.78	9.00
169	2023-09-02 00	NA	9.34	16.45	1.73	9.00
170	2023-09-02 01	NA	9.34	16.45	1.62	9.00
171	2023-09-02 02	NA	9.34	16.45	1.39	9.00
172	2023-09-02 03	NA	9.34	16.45	1.10	9.00
173	2023-09-02 04	NA	9.34	16.45	1.16	9.00
174	2023-09-02 05	NA	9.34	16.45	1.06	9.00



जिला स्वनन पदाधिकारी
रामगढ़

SI No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
175	2023-09-02 06	NA	9.34	16.45	0.83	9.00
176	2023-09-02 07	NA	9.34	16.45	0.77	9.00
177	2023-09-02 08	NA	9.34	16.45	0.78	9.00
178	2023-09-02 09	NA	9.34	16.45	0.88	9.00
179	2023-09-02 10	NA	9.34	16.45	1.06	9.00
180	2023-09-02 11	NA	9.34	16.45	1.45	9.00
181	2023-09-02 12	NA	9.34	16.45	1.14	9.00
182	2023-09-02 13	NA	9.34	16.45	0.63	9.00
183	2023-09-02 14	NA	9.34	16.45	0.64	9.00
184	2023-09-02 15	NA	9.34	16.45	0.48	9.00
185	2023-09-02 16	NA	9.34	16.45	0.42	9.00
186	2023-09-02 17	NA	9.34	16.45	0.36	9.00
187	2023-09-02 18	NA	9.34	16.45	0.53	9.00
188	2023-09-02 19	NA	9.34	16.45	0.44	9.00
189	2023-09-02 20	NA	9.34	16.45	0.74	9.00
190	2023-09-02 21	NA	9.34	16.45	1.24	9.00
191	2023-09-02 22	NA	9.34	16.45	0.94	9.00



जिला स्वनन पदाधिकारी
रामगढ़

SI No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
192	2023-09-02 23	NA	9.34	16.45	0.43	9.00
193	2023-09-03 00	NA	9.34	16.45	0.31	9.00
194	2023-09-03 01	NA	9.34	16.45	0.25	9.00
195	2023-09-03 02	NA	9.34	7.62	0.16	9.00
196	2023-09-03 03	NA	9.34	16.45	0.08	9.00
197	2023-09-03 04	NA	9.34	16.45	0.05	9.00
198	2023-09-03 05	NA	9.34	16.45	0.05	9.00
199	2023-09-03 06	NA	9.34	16.45	0.03	9.00
200	2023-09-03 07	NA	9.34	16.45	0.05	9.00
201	2023-09-03 08	NA	9.34	16.45	0.01	9.00
202	2023-09-03 09	NA	9.34	16.45	0.03	9.00
203	2023-09-03 10	NA	9.34	16.45	0.03	9.00
204	2023-09-03 11	NA	9.34	16.45	0.04	9.00
205	2023-09-03 12	NA	9.34	16.45	0.03	9.00
206	2023-09-03 13	NA	9.34	16.45	0.11	9.00
207	2023-09-03 14	NA	9.34	16.45	0.10	9.00
208	2023-09-03 15	NA	9.34	16.45	0.22	9.00



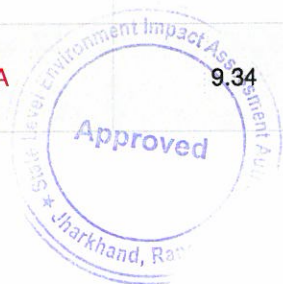
जिल्हा खनन पदाधिकारी
रामगढ

SI No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
209	2023-09-03 16	NA	9.34	16.45	0.45	9.00
210	2023-09-03 17	NA	9.34	16.45	0.62	9.00
211	2023-09-03 18	NA	9.34	16.45	0.53	9.00
212	2023-09-03 19	NA	9.34	16.45	0.23	9.00
213	2023-09-03 20	NA	9.34	16.45	0.22	9.00
214	2023-09-03 21	NA	9.34	16.45	0.21	9.00
215	2023-09-03 22	NA	9.34	16.45	0.95	9.00
216	2023-09-03 23	NA	9.34	16.45	0.89	9.00
217	2023-09-04 00	NA	9.34	16.45	0.64	9.00
218	2023-09-04 01	NA	9.34	16.45	0.53	9.00
219	2023-09-04 02	NA	9.34	16.45	0.49	9.00
220	2023-09-04 03	NA	9.34	16.45	0.37	9.00
221	2023-09-04 04	NA	9.34	16.45	0.29	9.00
222	2023-09-04 05	NA	9.34	16.45	0.21	9.00
223	2023-09-04 06	NA	9.34	16.45	0.22	9.00
224	2023-09-04 07	NA	9.34	16.45	0.15	9.00
225	2023-09-04 08	NA	9.34	16.45	0.14	9.00



जिल्हा खनन पदाधिकारी
रामगढ

SI No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
226	2023-09-04 09	NA	9.34	16.45	0.30	9.00
227	2023-09-04 10	NA	9.34	16.45	0.51	9.00
228	2023-09-04 11	NA	9.34	16.45	0.59	9.00
229	2023-09-04 12	NA	9.34	16.45	0.44	9.00
230	2023-09-04 13	NA	9.34	16.45	0.19	9.00
231	2023-09-04 14	NA	9.34	16.45	0.09	9.00
232	2023-09-04 15	NA	9.34	16.45	0.04	9.00
233	2023-09-04 16	NA	9.34	16.45	0.06	9.00
234	2023-09-04 17	NA	9.34	16.45	0.06	9.00
235	2023-09-04 18	NA	9.34	16.45	0.04	9.00
236	2023-09-04 19	NA	9.34	16.45	0.03	9.00
237	2023-09-04 20	NA	9.34	16.45	0.05	9.00
238	2023-09-04 21	NA	9.34	16.45	0.04	9.00
239	2023-09-04 22	NA	9.34	16.45	0.90	9.00
240	2023-09-04 23	NA	9.34	16.45	1.04	9.00
241	2023-09-05 00	NA	9.34	16.45	1.24	9.00
242	2023-09-05 01	NA	9.34	16.45	0.98	9.00



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जिला स्वनन पदाधिकारी
रामगढ़

SI No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
243	2023-09-05 02	NA	9.34	16.45	1.01	9.00
244	2023-09-05 03	NA	9.34	16.45	1.04	9.00
245	2023-09-05 04	NA	9.34	16.45	1.00	9.00
246	2023-09-05 05	NA	9.34	16.45	0.97	9.00
247	2023-09-05 06	NA	9.34	16.45	1.07	9.00
248	2023-09-05 07	NA	9.34	16.45	0.97	9.00
249	2023-09-05 08	NA	9.34	16.45	1.08	9.00
250	2023-09-05 09	NA	9.34	16.45	1.05	9.00
251	2023-09-05 10	NA	9.34	16.45	1.09	9.00
252	2023-09-05 11	NA	9.34	16.45	0.89	9.00
253	2023-09-05 12	NA	9.34	16.45	0.97	9.00
254	2023-09-05 13	NA	9.34	16.45	1.02	9.00
255	2023-09-05 14	NA	9.34	16.45	1.39	9.00
256	2023-09-05 15	NA	9.34	16.45	1.51	9.00
257	2023-09-05 16	NA	9.34	16.45	1.39	9.00
258	2023-09-05 17	NA	9.34	16.45	15.83	9.00
259	2023-09-05 18	NA	9.34	16.45	0.00	9.00



जिला स्वनन पदाधिकारी
रामगढ

SI No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
260	2023-09-05 19	NA	9.34	16.45	0.00	9.00
261	2023-09-05 20	NA	9.34	16.45	0.00	9.00
262	2023-09-05 21	NA	9.34	16.45	0.00	9.00
263	2023-09-05 22	NA	9.34	16.45	5.60	9.00
264	2023-09-05 23	NA	9.34	16.45	0.00	9.00
265	2023-09-06 00	NA	9.34	16.45	0.00	9.00
266	2023-09-06 01	NA	9.34	16.45	0.00	9.00
267	2023-09-06 02	NA	9.34	16.45	0.00	9.00
268	2023-09-06 03	NA	9.34	16.45	0.00	9.00
269	2023-09-06 04	NA	9.34	16.45	0.00	9.00
270	2023-09-06 05	NA	9.34	16.45	0.00	9.00
271	2023-09-06 06	NA	9.34	16.45	0.00	9.00
272	2023-09-06 07	NA	9.34	16.45	0.00	9.00
273	2023-09-06 08	NA	9.34	16.45	0.00	9.00
274	2023-09-06 09	NA	9.34	16.45	0.00	9.00
275	2023-09-06 10	NA	9.34	16.45	0.00	9.00



जिला स्तरीय पदाधिकारी
रामगढ़

SI No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
276	2023-09-06 11	NA	9.34	16.45	0.00	9.00
277	2023-09-06 12	NA	9.34	16.45	0.00	9.00
278	2023-09-06 13	NA	9.34	16.45	0.00	9.00
279	2023-09-06 14	NA	9.34	16.45	0.00	9.00
280	2023-09-06 15	NA	9.34	16.45	0.00	9.00
281	2023-09-06 16	NA	9.34	16.45	0.00	9.00
282	2023-09-06 17	NA	9.34	16.45	0.00	9.00
283	2023-09-06 18	NA	9.34	16.45	0.00	9.00
284	2023-09-06 19	NA	9.34	16.45	0.00	9.00
285	2023-09-06 20	NA	9.34	16.45	0.00	9.00
286	2023-09-06 21	NA	9.34	16.45	0.00	9.00
287	2023-09-06 22	NA	9.34	16.45	0.00	9.00
288	2023-09-06 23	NA	9.34	16.45	0.00	9.00
289	2023-09-07 00	NA	9.34	16.45	0.00	9.00
290	2023-09-07 01	NA	9.34	16.45	0.00	9.00
291	2023-09-07 02	NA	9.34	16.45	0.00	9.00
292	2023-09-07 03	NA	9.34	16.45	0.00	9.00



जिम्मा खनन पदाधिकारी
रामगढ़

Sl No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
293	2023-09-07 04	NA	9.34	16.45	0.00	9.00
294	2023-09-07 05	NA	9.34	16.45	0.00	9.00
295	2023-09-07 06	NA	9.34	16.45	0.00	9.00
296	2023-09-07 07	NA	9.34	16.45	0.00	9.00
297	2023-09-07 08	NA	9.34	16.45	0.00	9.00
298	2023-09-07 09	NA	9.34	16.45	0.00	9.00
299	2023-09-07 10	NA	9.34	16.45	0.00	9.00
300	2023-09-07 11	NA	9.34	16.45	0.00	9.00
301	2023-09-07 12	NA	9.34	16.45	0.00	9.00
302	2023-09-07 13	NA	9.34	16.45	0.00	9.00
303	2023-09-07 14	NA	9.34	16.45	0.00	9.00
304	2023-09-07 15	NA	9.34	16.45	0.00	9.00
305	2023-09-07 16	NA	9.34	16.45	0.00	9.00
306	2023-09-07 17	NA	9.34	16.45	0.00	9.00
307	2023-09-07 18	NA	9.34	16.45	0.00	9.00
308	2023-09-07 19	NA	9.34	16.45	0.00	9.00
309	2023-09-07 20	NA	9.34	16.45	0.00	9.00



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जिला स्वनन पदाधिकारी
रामगढ़

SI No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
310	2023-09-07 21	NA	9.34	16.45	0.00	9.00
311	2023-09-07 22	NA	9.34	16.45	4.85	9.00
312	2023-09-07 23	NA	9.34	16.45	0.00	9.00
313	2023-09-08 00	NA	9.34	16.45	151.37	9.00
314	2023-09-08 01	NA	9.34	16.45	94.52	9.00
315	2023-09-08 02	NA	9.34	16.45	63.76	9.00
316	2023-09-08 03	NA	9.34	16.45	90.19	9.00
317	2023-09-08 04	NA	9.34	16.45	69.96	9.00
318	2023-09-08 05	NA	9.34	16.45	57.04	9.00
319	2023-09-08 06	NA	9.34	16.45	71.83	9.00
320	2023-09-08 07	NA	9.34	16.45	60.82	9.00
321	2023-09-08 08	NA	9.34	16.45	51.54	9.00
322	2023-09-08 09	NA	9.34	16.45	66.00	9.00
323	2023-09-08 10	NA	9.34	16.45	62.46	9.00
324	2023-09-08 11	NA	9.34	16.45	57.45	9.00
325	2023-09-08 12	NA	9.34	16.45	57.54	9.00
326	2023-09-08 13	NA	9.34	16.45	38.96	9.00



जिला खनन पदाधिकारी
रामगढ़
जिला खनन पदाधिकारी

SI No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
327	2023-09-08 14	NA	9.34	16.45	0.00	9.00
328	2023-09-08 15	NA	9.34	16.45	0.00	9.00
329	2023-09-08 16	NA	9.34	16.45	0.00	9.00
330	2023-09-08 17	NA	9.34	16.45	0.00	9.00
331	2023-09-08 18	NA	9.34	16.45	0.00	9.00
332	2023-09-08 19	NA	9.34	16.45	0.00	9.00
333	2023-09-08 20	NA	9.34	16.45	0.00	9.00
334	2023-09-08 21	NA	9.34	16.45	0.00	9.00
335	2023-09-08 22	NA	9.34	16.45	8.55	9.00
336	2023-09-08 23	NA	9.34	16.45	22.91	9.00
337	2023-09-09 00	NA	9.34	16.45	23.11	9.00
338	2023-09-09 01	NA	9.34	16.45	22.66	9.00
339	2023-09-09 02	NA	9.34	16.45	17.21	9.00
340	2023-09-09 03	NA	9.34	16.45	3.28	9.00
341	2023-09-09 04	NA	9.34	16.45	1.17	9.00
342	2023-09-09 05	NA	9.34	16.45	0.06	9.00
343	2023-09-09 06	NA	9.34	16.45	0.01	9.00



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जिला स्तरीय पर्यावरण प्रभाव आकलन
रामगढ़

Sl No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
344	2023-09-09 07	NA	9.34	16.45	0.00	9.00
345	2023-09-09 08	NA	9.34	16.45	0.00	9.00
346	2023-09-09 09	NA	9.34	16.45	0.00	9.00
347	2023-09-09 10	NA	9.34	13.53	0.00	9.00
348	2023-09-09 11	NA	9.34	10.44	0.01	9.00
349	2023-09-09 12	NA	9.34	16.45	0.01	9.00
350	2023-09-09 13	NA	9.34	16.45	0.01	9.00
351	2023-09-09 14	NA	9.34	16.45	0.03	9.00
352	2023-09-09 15	NA	9.34	16.45	0.06	9.00
353	2023-09-09 16	NA	9.34	16.45	0.06	9.00
354	2023-09-09 17	NA	9.34	16.45	0.11	9.00
355	2023-09-09 18	NA	9.34	16.45	0.31	9.00
356	2023-09-09 19	NA	9.34	16.45	0.17	9.00
357	2023-09-09 20	NA	9.34	16.45	0.04	9.00
358	2023-09-09 21	NA	9.34	16.45	0.04	9.00
359	2023-09-09 22	NA	9.34	16.45	0.96	9.00
360	2023-09-09 23	NA	9.34	16.45	2.51	9.00



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जिल्हा खानन पदाधिकारी
रामगढ

SI No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
361	2023-09-10 00	NA	9.34	16.45	2.56	9.00
362	2023-09-10 01	NA	9.34	16.45	1.22	9.00
363	2023-09-10 02	NA	9.34	16.45	0.78	9.00
364	2023-09-10 03	NA	9.34	16.45	0.60	9.00
365	2023-09-10 04	NA	9.34	16.45	0.43	9.00
366	2023-09-10 05	NA	9.34	16.45	0.40	9.00
367	2023-09-10 06	NA	9.34	16.45	0.30	9.00
368	2023-09-10 07	NA	9.34	16.45	0.37	9.00
369	2023-09-10 08	NA	9.34	16.45	0.35	9.00
370	2023-09-10 09	NA	9.34	16.45	0.35	9.00
371	2023-09-10 10	NA	9.34	16.45	0.42	9.00
372	2023-09-10 11	NA	9.34	16.45	0.66	9.00
373	2023-09-10 12	NA	9.34	16.45	1.29	9.00
374	2023-09-10 13	NA	9.34	16.45	2.85	9.00
375	2023-09-10 14	NA	9.34	16.45	3.28	9.00
376	2023-09-10 15	NA	9.34	16.45	3.16	9.00



जिन्ना खनन पदाधिकारी
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SI No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
377	2023-09-10 16	NA	9.34	16.45	3.09	9.00
378	2023-09-10 17	NA	9.34	16.45	3.44	9.00
379	2023-09-10 18	NA	9.34	16.45	3.55	9.00
380	2023-09-10 19	NA	9.34	16.45	3.15	9.00
381	2023-09-10 20	NA	9.34	16.45	2.85	9.00
382	2023-09-10 21	NA	9.34	16.45	2.70	9.00
383	2023-09-10 22	NA	9.34	16.45	0.84	9.00
384	2023-09-10 23	NA	9.34	16.45	0.34	9.00
385	2023-09-11 00	NA	9.34	16.45	0.19	9.00
386	2023-09-11 01	NA	9.34	16.45	0.04	9.00
387	2023-09-11 02	NA	9.34	16.45	0.02	9.00
388	2023-09-11 03	NA	9.34	16.45	0.01	9.00
389	2023-09-11 04	NA	9.34	16.45	0.01	9.00
390	2023-09-11 05	NA	9.34	16.45	0.01	9.00
391	2023-09-11 06	NA	9.34	16.45	0.00	9.00
392	2023-09-11 07	NA	9.34	16.45	0.00	9.00
393	2023-09-11 08	NA	9.34	16.45	0.00	9.00



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जिल्हा अवनन पदाधिकारी
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SI No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
394	2023-09-11 09	NA	9.34	16.45	0.01	9.00
395	2023-09-11 10	NA	9.34	16.45	0.02	9.00
396	2023-09-11 11	NA	9.34	16.45	0.03	9.00
397	2023-09-11 12	NA	9.34	16.45	0.18	9.00
398	2023-09-11 13	NA	9.34	16.45	0.40	9.00
399	2023-09-11 14	NA	9.34	16.45	0.72	9.00
400	2023-09-11 15	NA	9.34	16.45	1.14	9.00
401	2023-09-11 16	NA	9.34	16.45	1.39	9.00
402	2023-09-11 17	NA	9.34	16.45	1.70	9.00
403	2023-09-11 18	NA	9.34	16.45	1.82	9.00
404	2023-09-11 19	NA	9.34	16.45	2.00	9.00
405	2023-09-11 20	NA	9.34	16.45	1.92	9.00
406	2023-09-11 21	NA	9.34	16.45	1.71	9.00
407	2023-09-11 22	NA	9.34	16.45	0.81	9.00
408	2023-09-11 23	NA	9.34	16.45	0.81	9.00
409	2023-09-12 00	NA	9.34	16.45	0.50	9.00
410	2023-09-12 01	NA	9.34	16.45	0.20	9.00



जिला स्वनन पदाधिकारी
रामगढ़

SI No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
411	2023-09-12 02	NA	9.34	16.45	0.09	9.00
412	2023-09-12 03	NA	9.34	16.45	0.04	9.00
413	2023-09-12 04	NA	9.34	16.45	0.02	9.00
414	2023-09-12 05	NA	9.34	16.45	0.01	9.00
415	2023-09-12 06	NA	9.34	16.45	0.00	9.00
416	2023-09-12 07	NA	9.34	16.45	0.00	9.00
417	2023-09-12 08	NA	9.34	16.45	0.00	9.00
418	2023-09-12 09	NA	9.34	16.45	0.00	9.00
419	2023-09-12 10	NA	9.34	16.45	0.03	9.00
420	2023-09-12 11	NA	9.34	16.45	0.01	9.00
421	2023-09-12 12	NA	9.34	16.45	0.17	9.00
422	2023-09-12 13	NA	9.34	16.45	0.52	9.00
423	2023-09-12 14	NA	9.34	16.45	0.71	9.00
424	2023-09-12 15	NA	9.34	16.45	0.95	9.00
425	2023-09-12 16	NA	9.34	16.45	1.53	9.00
426	2023-09-12 17	NA	9.34	16.45	2.34	9.00
427	2023-09-12 18	NA	9.34	16.45	2.01	9.00



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जिल्हा अखनन पदाधिकारी
रामगढ

Sl No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
428	2023-09-12 19	NA	9.34	16.45	1.72	9.00
429	2023-09-12 20	NA	9.34	16.45	1.44	9.00
430	2023-09-12 21	NA	9.34	16.45	1.14	9.00
431	2023-09-12 22	NA	9.34	16.45	0.48	9.00
432	2023-09-12 23	NA	9.34	16.45	0.37	9.00
433	2023-09-13 00	NA	9.34	16.45	0.05	9.00
434	2023-09-13 01	NA	9.34	16.45	0.03	9.00
435	2023-09-13 02	NA	9.34	16.45	0.02	9.00
436	2023-09-13 03	NA	9.34	16.45	0.01	9.00
437	2023-09-13 04	NA	9.34	16.45	0.00	9.00
438	2023-09-13 05	NA	9.34	16.45	0.00	9.00
439	2023-09-13 06	NA	9.34	16.45	0.00	9.00
440	2023-09-13 07	NA	9.34	16.45	0.00	9.00
441	2023-09-13 08	NA	9.34	16.45	0.00	9.00
442	2023-09-13 09	NA	9.34	16.45	0.00	9.00
443	2023-09-13 10	NA	9.34	16.45	0.01	9.00
444	2023-09-13 11	NA	9.34	16.45	0.04	9.00



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जिल्हा खनन पदाधिकारी
रामगढ

SI No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
445	2023-09-13 12	NA	9.34	16.45	0.08	9.00
446	2023-09-13 13	NA	9.34	16.45	0.29	9.00
447	2023-09-13 14	NA	9.34	16.45	0.86	9.00
448	2023-09-13 15	NA	9.34	16.45	1.53	9.00
449	2023-09-13 16	NA	9.34	16.45	1.93	9.00
450	2023-09-13 17	NA	9.34	16.45	1.82	9.00
451	2023-09-13 18	NA	9.34	16.45	1.32	9.00
452	2023-09-13 19	NA	9.34	16.45	1.25	9.00
453	2023-09-13 20	NA	9.34	16.45	0.99	9.00
454	2023-09-13 21	NA	9.34	16.45	0.45	9.00
455	2023-09-13 22	NA	9.34	16.45	0.54	9.00
456	2023-09-13 23	NA	9.34	16.45	0.27	9.00
457	2023-09-14 00	NA	9.34	16.45	0.10	9.00
458	2023-09-14 01	NA	9.34	16.45	0.04	9.00
459	2023-09-14 02	NA	9.34	16.45	0.00	9.00
460	2023-09-14 03	NA	9.34	16.45	0.01	9.00
461	2023-09-14 04	NA	9.34	16.45	0.01	9.00



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जिला स्तरीय पदाधिकारी
रामगढ़

Sl No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
462	2023-09-14 05	NA	9.34	16.45	0.00	9.00
463	2023-09-14 06	NA	9.34	16.45	0.00	9.00
464	2023-09-14 07	NA	9.34	16.45	0.00	9.00
465	2023-09-14 08	NA	9.34	16.45	0.00	9.00
466	2023-09-14 09	NA	9.34	16.45	0.00	9.00
467	2023-09-14 10	NA	9.34	16.45	0.00	9.00
468	2023-09-14 11	NA	9.34	16.45	0.00	9.00
469	2023-09-14 12	NA	9.34	16.45	0.00	9.00
470	2023-09-14 13	NA	9.34	16.45	0.00	9.00
471	2023-09-14 14	NA	9.34	16.45	0.00	9.00
472	2023-09-14 15	NA	9.34	16.45	0.00	9.00
473	2023-09-14 16	NA	9.34	16.45	0.00	9.00
474	2023-09-14 17	NA	9.34	16.45	0.05	9.00
475	2023-09-14 18	NA	9.34	11.02	0.15	9.00
476	2023-09-14 19	NA	9.34	13.29	0.24	9.00
477	2023-09-14 20	NA	9.34	16.45	0.08	9.00
478	2023-09-14 21	NA	9.34	16.45	0.00	9.00



जिल्हा खनन पदाधिकारी
रामगढ

SI No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
479	2023-09-14 22	NA	9.34	16.45	0.22	9.00
480	2023-09-14 23	NA	9.34	16.45	0.17	9.00
481	2023-09-15 00	NA	9.34	16.45	0.14	9.00
482	2023-09-15 01	NA	9.34	16.45	0.12	9.00
483	2023-09-15 02	NA	9.34	16.45	0.09	9.00
484	2023-09-15 03	NA	9.34	16.45	0.08	9.00
485	2023-09-15 04	NA	9.34	16.45	0.05	9.00
486	2023-09-15 05	NA	9.34	16.45	0.06	9.00
487	2023-09-15 06	NA	9.34	16.45	0.04	9.00
488	2023-09-15 07	NA	9.34	16.45	0.04	9.00
489	2023-09-15 08	NA	9.34	16.45	0.05	9.00
490	2023-09-15 09	NA	9.34	16.45	0.04	9.00
491	2023-09-15 10	NA	9.34	16.45	0.03	9.00
492	2023-09-15 11	NA	9.34	16.45	0.02	9.00
493	2023-09-15 12	NA	9.34	16.45	0.04	9.00
494	2023-09-15 13	NA	9.34	16.45	0.05	9.00



जिल्हा खानन पदाधिकारी
रामगढ

SI No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
495	2023-09-15 14	NA	9.34	16.45	0.14	9.00
496	2023-09-15 15	NA	9.34	16.45	0.22	9.00
497	2023-09-15 16	NA	9.34	16.45	0.22	9.00
498	2023-09-15 17	NA	9.34	16.45	0.26	9.00
499	2023-09-15 18	NA	9.34	16.45	0.22	9.00
500	2023-09-15 19	NA	9.34	16.45	0.39	9.00
501	2023-09-15 20	NA	9.34	16.45	1.17	9.00
502	2023-09-15 21	NA	9.34	16.45	0.47	9.00
503	2023-09-15 22	NA	9.34	16.45	0.45	9.00
504	2023-09-15 23	NA	9.34	16.45	0.40	9.00
505	2023-09-16 00	NA	9.34	16.45	0.30	9.00
506	2023-09-16 01	NA	9.34	16.45	0.26	9.00
507	2023-09-16 02	NA	9.34	16.45	0.22	9.00
508	2023-09-16 03	NA	9.34	16.45	0.27	9.00
509	2023-09-16 04	NA	9.34	16.45	0.15	9.00
510	2023-09-16 05	NA	9.34	16.45	0.14	9.00
511	2023-09-16 06	NA	9.34	16.45	0.17	9.00



जिल्हा खनन पदाधिकारी
रामगढ

SI No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
512	2023-09-16 07	NA	9.34	16.45	0.14	9.00
513	2023-09-16 08	NA	9.34	16.45	0.08	9.00
514	2023-09-16 09	NA	9.34	16.45	0.13	9.00
515	2023-09-16 10	NA	9.34	16.45	0.18	9.00
516	2023-09-16 11	NA	9.34	16.45	0.17	9.00
517	2023-09-16 12	NA	9.34	16.45	0.31	9.00
518	2023-09-16 13	NA	9.34	16.45	1.85	9.00
519	2023-09-16 14	NA	9.34	16.45	3.16	9.00
520	2023-09-16 15	NA	9.34	16.45	3.02	9.00
521	2023-09-16 16	NA	9.34	16.45	1.97	9.00
522	2023-09-16 17	NA	9.34	16.45	1.77	9.00
523	2023-09-16 18	NA	9.34	16.45	1.60	9.00
524	2023-09-16 19	NA	9.34	16.45	0.97	9.00
525	2023-09-16 20	NA	9.34	16.45	0.81	9.00
526	2023-09-16 21	NA	9.34	16.45	0.69	9.00
527	2023-09-16 22	NA	9.34	16.45	0.57	9.00
528	2023-09-16 23	NA	9.34	16.45	0.61	9.00



जिला खनन पदाधिकारी
रामगढ़

SI No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
529	2023-09-17 00	NA	9.34	16.45	0.50	9.00
530	2023-09-17 01	NA	9.34	16.45	0.48	9.00
531	2023-09-17 02	NA	9.34	16.45	0.51	9.00
532	2023-09-17 03	NA	9.34	16.45	0.41	9.00
533	2023-09-17 04	NA	9.34	16.45	0.35	9.00
534	2023-09-17 05	NA	9.34	16.45	0.39	9.00
535	2023-09-17 06	NA	9.34	16.45	0.35	9.00
536	2023-09-17 07	NA	9.34	16.45	0.37	9.00
537	2023-09-17 08	NA	9.34	16.45	0.29	9.00
538	2023-09-17 09	NA	9.34	16.45	0.34	9.00
539	2023-09-17 10	NA	9.34	16.45	0.38	9.00
540	2023-09-17 11	NA	9.34	16.45	0.41	9.00
541	2023-09-17 12	NA	9.34	16.45	0.54	9.00
542	2023-09-17 13	NA	9.34	16.45	0.97	9.00
543	2023-09-17 14	NA	9.34	16.45	2.01	9.00
544	2023-09-17 15	NA	9.34	16.45	2.51	9.00
545	2023-09-17 16	NA	9.34	16.45	2.51	9.00



जिला स्तर पर पदाधिकारी
रामगढ़

Sl No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
546	2023-09-17 17	NA	9.34	16.45	2.42	9.00
547	2023-09-17 18	NA	9.34	16.45	2.56	9.00
548	2023-09-17 19	NA	9.34	16.45	2.43	9.00
549	2023-09-17 20	NA	9.34	16.45	2.28	9.00
550	2023-09-17 21	NA	9.34	16.45	1.76	9.00
551	2023-09-17 22	NA	9.34	16.45	0.46	9.00
552	2023-09-17 23	NA	9.34	16.45	0.08	9.00
553	2023-09-18 00	NA	9.34	16.45	0.13	9.00
554	2023-09-18 01	NA	9.34	16.45	0.09	9.00
555	2023-09-18 02	NA	9.34	16.45	0.01	9.00
556	2023-09-18 03	NA	9.34	16.45	0.01	9.00
557	2023-09-18 04	NA	9.34	16.45	0.00	9.00
558	2023-09-18 05	NA	9.34	16.45	0.00	9.00
559	2023-09-18 06	NA	9.34	16.45	0.01	9.00
560	2023-09-18 07	NA	9.34	16.45	0.00	9.00
561	2023-09-18 08	NA	9.34	16.45	0.00	9.00
562	2023-09-18 09	NA	9.34	16.45	0.07	9.00



जिल्हा खनन पदाधिकारी
रामगढ

SI No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
563	2023-09-18 10	NA	9.34	16.45	1.10	9.00
564	2023-09-18 11	NA	9.34	16.45	1.94	9.00
565	2023-09-18 12	NA	9.34	16.45	1.99	9.00
566	2023-09-18 13	NA	9.34	16.45	1.99	9.00
567	2023-09-18 14	NA	9.34	16.45	1.86	9.00
568	2023-09-18 15	NA	9.34	16.45	2.04	9.00
569	2023-09-18 16	NA	9.34	16.45	2.11	9.00
570	2023-09-18 17	NA	9.34	16.45	2.07	9.00
571	2023-09-18 18	NA	9.34	16.45	2.64	9.00
572	2023-09-18 19	NA	9.34	16.45	2.57	9.00
573	2023-09-18 20	NA	9.34	16.45	2.18	9.00
574	2023-09-18 21	NA	9.34	16.45	2.11	9.00
575	2023-09-18 22	NA	9.34	16.45	0.63	9.00
576	2023-09-18 23	NA	9.34	16.45	0.13	9.00
577	2023-09-19 00	NA	9.34	16.45	0.05	9.00
578	2023-09-19 01	NA	9.34	16.45	0.01	9.00
579	2023-09-19 02	NA	9.34	16.45	0.00	9.00



पिढा खनन पदाधिकारी
रामगढ

SI No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
580	2023-09-19 03	NA	9.34	16.45	0.00	9.00
581	2023-09-19 04	NA	9.34	16.45	0.00	9.00
582	2023-09-19 05	NA	9.34	16.45	0.00	9.00
583	2023-09-19 06	NA	9.34	16.45	0.00	9.00
584	2023-09-19 07	NA	9.34	16.45	0.00	9.00
585	2023-09-19 08	NA	9.34	16.45	0.00	9.00
586	2023-09-19 09	NA	9.34	16.45	0.00	9.00
587	2023-09-19 10	NA	9.34	16.45	0.00	9.00
588	2023-09-19 11	NA	9.34	16.45	0.00	9.00
589	2023-09-19 12	NA	9.34	16.45	0.00	9.00
590	2023-09-19 13	NA	9.34	16.45	0.10	9.00
591	2023-09-19 14	NA	9.34	16.45	0.31	9.00
592	2023-09-19 15	NA	9.34	16.45	0.90	9.00
593	2023-09-19 16	NA	9.34	16.45	1.02	9.00
594	2023-09-19 17	NA	9.34	16.45	0.57	9.00
595	2023-09-19 18	NA	9.34	16.45	0.38	9.00



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 रामगढ

SI No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
596	2023-09-19 19	NA	9.34	16.45	0.34	9.00
597	2023-09-19 20	NA	9.34	16.45	0.40	9.00
598	2023-09-19 21	NA	9.34	16.45	0.39	9.00
599	2023-09-19 22	NA	9.34	16.45	0.22	9.00
600	2023-09-19 23	NA	9.34	16.45	0.10	9.00
601	2023-09-20 00	NA	9.34	16.45	0.02	9.00
602	2023-09-20 01	NA	9.34	16.45	0.05	9.00
603	2023-09-20 02	NA	9.34	16.45	0.00	9.00
604	2023-09-20 03	NA	9.34	16.45	0.00	9.00
605	2023-09-20 04	NA	9.34	16.45	0.00	9.00
606	2023-09-20 05	NA	9.34	16.45	0.00	9.00
607	2023-09-20 06	NA	9.34	16.45	0.00	9.00
608	2023-09-20 07	NA	9.34	16.45	0.00	9.00
609	2023-09-20 08	NA	9.34	16.45	0.00	9.00
610	2023-09-20 09	NA	9.34	7.60	0.00	9.00
611	2023-09-20 10	NA	9.34	16.45	0.00	9.00
612	2023-09-20 11	NA	9.34	16.45	0.00	9.00



जिन्ना खनन पदाधिकारः
रामगढ

Sl No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
613	2023-09-20 12	NA	9.34	16.45	0.00	9.00
614	2023-09-20 13	NA	9.34	16.45	0.00	9.00
615	2023-09-20 14	NA	9.34	16.45	0.00	9.00
616	2023-09-20 15	NA	9.34	16.45	0.00	9.00
617	2023-09-20 16	NA	9.34	16.45	0.00	9.00
618	2023-09-20 17	NA	9.34	16.45	0.00	9.00
619	2023-09-20 18	NA	9.34	16.45	0.00	9.00
620	2023-09-20 19	NA	9.34	16.45	0.00	9.00
621	2023-09-20 20	NA	9.34	16.45	0.00	9.00
622	2023-09-20 21	NA	9.34	16.45	0.00	9.00
623	2023-09-20 22	NA	9.34	16.45	0.41	9.00
624	2023-09-20 23	NA	9.34	16.45	0.52	9.00
625	2023-09-21 00	NA	9.34	16.45	0.35	9.00
626	2023-09-21 01	NA	9.34	16.45	0.28	9.00
627	2023-09-21 02	NA	9.34	16.45	0.61	9.00
628	2023-09-21 03	NA	9.34	16.45	0.59	9.00
629	2023-09-21 04	NA	9.34	16.45	0.45	9.00



प्रिक्का खनन पदाधिकारः
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SI No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
630	2023-09-21 05	NA	9.34	16.45	0.22	9.00
631	2023-09-21 06	NA	9.34	16.45	0.13	9.00
632	2023-09-21 07	NA	9.34	16.45	0.13	9.00
633	2023-09-21 08	NA	9.34	16.45	0.15	9.00
634	2023-09-21 09	NA	9.34	16.45	0.45	9.00
635	2023-09-21 10	NA	9.34	16.45	1.67	9.00
636	2023-09-21 11	NA	9.34	16.45	2.17	9.00
637	2023-09-21 12	NA	9.34	16.45	1.08	9.00
638	2023-09-21 13	NA	9.34	16.45	0.59	9.00
639	2023-09-21 14	NA	9.34	16.45	0.49	9.00
640	2023-09-21 15	NA	9.34	16.45	0.37	9.00
641	2023-09-21 16	NA	9.34	16.45	0.41	9.00
642	2023-09-21 17	NA	9.34	16.45	0.49	9.00
643	2023-09-21 18	NA	9.34	16.45	0.73	9.00
644	2023-09-21 19	NA	9.34	16.45	0.70	9.00
645	2023-09-21 20	NA	9.34	16.45	0.56	9.00
646	2023-09-21 21	NA	9.34	16.45	0.51	9.00



जिल्हा खनन पदाधिकारी
रामगढ

SI No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
647	2023-09-21 22	NA	9.34	16.45	0.62	9.00
648	2023-09-21 23	NA	9.34	16.45	0.73	9.00
649	2023-09-22 00	NA	9.34	16.45	0.69	9.00
650	2023-09-22 01	NA	9.34	16.45	0.61	9.00
651	2023-09-22 02	NA	9.34	16.45	0.57	9.00
652	2023-09-22 03	NA	9.34	16.45	0.57	9.00
653	2023-09-22 04	NA	9.34	16.45	0.43	9.00
654	2023-09-22 05	NA	9.34	16.45	0.38	9.00
655	2023-09-22 06	NA	9.34	16.45	0.59	9.00
656	2023-09-22 07	NA	9.34	16.45	0.99	9.00
657	2023-09-22 08	NA	9.34	16.45	0.92	9.00
658	2023-09-22 09	NA	9.34	16.45	0.62	9.00
659	2023-09-22 10	NA	9.34	16.45	0.47	9.00
660	2023-09-22 11	NA	9.34	16.45	0.35	9.00
661	2023-09-22 12	NA	9.34	16.45	0.41	9.00
662	2023-09-22 13	NA	9.34	16.45	0.61	9.00
663	2023-09-22 14	NA	9.34	16.45	0.62	9.00



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जिल्हा खनन पदाधिकारी
रामगढ

Sl No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
664	2023-09-22 15	0.00	9.34	16.45	0.93	9.00
665	2023-09-22 16	NA	9.34	16.45	0.84	9.00
666	2023-09-22 17	NA	9.34	16.45	0.89	9.00
667	2023-09-22 18	NA	9.34	16.45	1.16	9.00
668	2023-09-22 19	NA	9.34	16.45	0.87	9.00
669	2023-09-22 20	NA	9.34	16.45	0.70	9.00
670	2023-09-22 21	NA	9.34	16.45	0.58	9.00
671	2023-09-22 22	NA	9.34	16.45	0.60	9.00
672	2023-09-22 23	NA	9.34	16.45	0.57	9.00
673	2023-09-23 00	NA	9.34	16.45	0.57	9.00
674	2023-09-23 01	NA	9.34	16.45	0.47	9.00
675	2023-09-23 02	NA	9.34	16.45	0.41	9.00
676	2023-09-23 03	NA	9.34	16.45	0.36	9.00
677	2023-09-23 04	NA	9.34	16.45	0.31	9.00
678	2023-09-23 05	NA	9.34	16.45	0.32	9.00
679	2023-09-23 06	NA	9.34	16.45	0.26	9.00
680	2023-09-23 07	NA	9.34	16.45	0.18	9.00



जिम्मा खनन पदाधिकारी
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SI No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
681	2023-09-23 08	NA	9.34	16.45	0.19	9.00
682	2023-09-23 09	NA	9.34	16.45	0.17	9.00
683	2023-09-23 10	NA	9.34	16.45	0.28	9.00
684	2023-09-23 11	NA	9.34	16.45	0.26	9.00
685	2023-09-23 12	NA	9.34	16.45	0.68	9.00
686	2023-09-23 13	NA	9.34	16.45	0.80	9.00
687	2023-09-23 14	NA	9.34	16.45	0.59	9.00
688	2023-09-23 15	NA	9.34	16.45	0.71	9.00
689	2023-09-23 16	NA	9.34	16.45	0.93	9.00
690	2023-09-23 17	NA	9.34	16.45	1.13	9.00
691	2023-09-23 18	NA	9.34	16.45	1.12	9.00
692	2023-09-23 19	NA	9.34	16.45	0.90	9.00
693	2023-09-23 20	NA	9.34	16.45	1.66	9.00
694	2023-09-23 21	NA	9.34	16.45	1.45	9.00
695	2023-09-23 22	NA	9.34	16.45	0.63	9.00
696	2023-09-23 23	NA	9.34	16.45	0.33	9.00



APR 2023
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 रामगढ़

SI No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
697	2023-09-24 00	NA	9.34	16.45	0.23	9.00
698	2023-09-24 01	NA	9.34	16.45	0.16	9.00
699	2023-09-24 02	NA	9.34	16.45	0.14	9.00
700	2023-09-24 03	NA	9.34	16.45	0.10	9.00
701	2023-09-24 04	NA	9.34	16.45	0.11	9.00
702	2023-09-24 05	NA	9.34	16.45	0.12	9.00
703	2023-09-24 06	NA	9.34	16.45	0.11	9.00
704	2023-09-24 07	NA	9.34	16.45	0.13	9.00
705	2023-09-24 08	NA	9.34	16.45	0.09	9.00
706	2023-09-24 09	NA	9.34	16.45	0.17	9.00
707	2023-09-24 10	NA	9.34	16.45	0.28	9.00
708	2023-09-24 11	NA	9.34	16.45	0.23	9.00
709	2023-09-24 12	NA	9.34	16.45	0.28	9.00
710	2023-09-24 13	NA	9.34	16.45	0.41	9.00
711	2023-09-24 14	NA	9.34	16.45	0.51	9.00
712	2023-09-24 15	NA	9.34	16.45	0.75	9.00



AS:J

जिज्ञा खनन पदाधिकारी
रामगढ़


Sl No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
713	2023-09-24 16	NA	9.34	16.45	0.79	9.00
714	2023-09-24 17	NA	9.34	16.45	1.31	9.00
715	2023-09-24 18	NA	9.34	16.45	1.05	9.00
716	2023-09-24 19	NA	9.34	16.45	1.68	9.00
717	2023-09-24 20	NA	9.34	16.45	1.00	9.00
718	2023-09-24 21	NA	9.34	16.45	0.79	9.00
719	2023-09-24 22	NA	9.34	16.45	0.70	9.00
720	2023-09-24 23	NA	9.34	16.45	0.65	9.00
721	2023-09-25 00	NA	9.34	16.45	0.53	9.00
722	2023-09-25 01	NA	9.34	16.45	0.44	9.00
723	2023-09-25 02	NA	9.34	16.45	0.39	9.00
724	2023-09-25 03	NA	9.34	16.45	0.28	9.00
725	2023-09-25 04	NA	9.34	16.45	0.24	9.00
726	2023-09-25 05	NA	9.34	16.45	0.14	9.00
727	2023-09-25 06	NA	9.34	16.45	0.12	9.00
728	2023-09-25 07	NA	9.34	16.45	0.07	9.00
729	2023-09-25 08	NA	9.34	16.45	0.10	9.00



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Sl No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
730	2023-09-25 09	NA	9.34	16.45	0.14	9.00
731	2023-09-25 10	NA	9.34	16.45	0.20	9.00
732	2023-09-25 11	NA	9.34	16.45	0.67	9.00
733	2023-09-25 12	NA	9.34	16.45	0.64	9.00
734	2023-09-25 13	NA	9.34	16.45	0.54	9.00
735	2023-09-25 14	NA	9.34	16.45	0.62	9.00
736	2023-09-25 15	NA	9.34	16.45	1.02	9.00
737	2023-09-25 16	NA	9.34	16.45	1.56	9.00
738	2023-09-25 17	NA	9.34	16.45	1.95	9.00
739	2023-09-25 18	NA	9.34	16.45	1.81	9.00
740	2023-09-25 19	NA	9.34	7.67	2.06	9.00
741	2023-09-25 20	NA	9.34	16.45	2.57	9.00
742	2023-09-25 21	NA	9.34	16.45	1.71	9.00
743	2023-09-25 22	NA	9.34	16.45	0.51	9.00
744	2023-09-25 23	NA	9.34	16.45	0.21	9.00
745	2023-09-26 00	NA	9.34	16.45	0.55	9.00
746	2023-09-26 01	NA	9.34	16.45	0.53	9.00




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SI No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
747	2023-09-26 02	NA	9.34	16.45	0.63	9.00
748	2023-09-26 03	NA	9.34	16.45	0.57	9.00
749	2023-09-26 04	NA	9.34	16.45	1.19	9.00
750	2023-09-26 05	NA	9.34	16.45	2.04	9.00
751	2023-09-26 06	NA	9.34	16.45	1.01	9.00
752	2023-09-26 07	NA	9.34	16.45	0.77	9.00
753	2023-09-26 08	NA	9.34	16.45	0.59	9.00
754	2023-09-26 09	NA	9.34	16.45	0.58	9.00
755	2023-09-26 10	NA	9.34	16.45	0.57	9.00
756	2023-09-26 11	51.37	17.56	16.45	0.41	9.00
757	2023-09-26 12	51.37	NA	16.45	0.56	9.00
758	2023-09-26 13	NA	NA	16.45	0.90	9.00
759	2023-09-26 14	NA	NA	16.45	1.50	NA
760	2023-09-26 15	0.00	NA	7.96	1.56	NA
761	2023-09-26 16	70.05	NA	16.45	1.82	NA
762	2023-09-26 17	44.36	NA	NA	3.18	NA
763	2023-09-26 18	28.42	NA	NA	3.53	NA



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SI No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
764	2023-09-26 19	40.38	NA	NA	3.62	NA
765	2023-09-26 20	46.40	NA	NA	3.33	NA
766	2023-09-26 21	49.16	NA	NA	3.03	NA
767	2023-09-26 22	44.23	NA	NA	2.83	NA
768	2023-09-26 23	42.15	NA	NA	2.58	NA
769	2023-09-27 00	34.61	NA	NA	0.95	NA
770	2023-09-27 01	31.29	NA	NA	0.68	NA
771	2023-09-27 02	25.75	NA	NA	0.33	NA
772	2023-09-27 03	23.13	NA	NA	0.17	NA
773	2023-09-27 04	19.56	NA	NA	0.04	NA
774	2023-09-27 05	17.97	NA	NA	0.01	NA
775	2023-09-27 06	14.52	NA	NA	0.03	NA
776	2023-09-27 07	12.97	NA	NA	0.27	NA
777	2023-09-27 08	11.37	NA	NA	0.61	NA
778	2023-09-27 09	10.66	NA	NA	0.50	NA
779	2023-09-27 10	10.19	NA	NA	0.32	NA
780	2023-09-27 11	9.98	NA	NA	0.64	NA



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SI No	Time	SDO_OFFICE-PM10 - (ug/m3) Raw	SDO_OFFICE-PM2.5 - (ug/m3) Raw	SDO_OFFICE-NOx - (ug/m3) Raw	SDO_OFFICE-CO - (mg/m3) Raw	SDO_OFFICE-SO2 - (ug/m3) Raw
781	2023-09-27 12	9.81	NA	NA	0.61	NA
782	2023-09-27 13	9.73	NA	NA	0.82	NA
783	2023-09-27 14	9.69	NA	NA	1.03	NA
784	2023-09-27 15	9.67	NA	NA	1.33	NA
785	2023-09-27 16	9.34	NA	NA	1.47	NA
786	2023-09-27 17	6.02	NA	NA	1.61	NA
787	2023-09-27 18	3.31	NA	NA	1.57	NA
788	2023-09-27 19	5.39	NA	NA	1.69	NA
789	2023-09-27 20	7.65	NA	NA	1.63	NA
790	2023-09-27 21	8.50	NA	NA	1.71	NA
791	2023-09-27 22	9.34	NA	NA	1.71	NA
792	2023-09-27 23	6.92	NA	NA	1.65	NA

Report Details: JSPL_SDO | 2024-01-09 13:26:02 | Custom Report



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 राँची



ENVIRO-TECH SERVICES

An Analytical Laboratory



(A GOVERNMENT APPROVED LAB)

Plot No. 1/32, S.S. of G.T. Road Industrial Area, Ghazlabad (U.P.) - 201001

email : etslab2012@gmail.com | Website : www.etslab.in | Ph: 9911516076, 9811736063

TEST REPORT

TEST REPORT NO.: ETS/1021/09/2023

DATE OF REPORT: 25.09.2023

AMBIENT AIR MONITORING AND ANALYSIS REPORT

Name And Address of Customer : SHRIRAM POWER & STEEL PVT LTD
ARA SARUBERA ROAD, NAYAMORE, P O KUJU, DIST RAMGARH
JHARKHAND 829122

Date of Monitoring : 16.09.2023
Analysis Start Date : 19.09.2023
Analysis End Date : 20.09.2023
Duration Of Monitoring : 16.09.2023 To 17.09.2023
Time Of Monitoring : 09.55 AM To 10.10 AM
Sample ID No : 1021
Sampling Done By : ETS STAFF
Sampling Location : NEAR LABOUR QUARTER
Sampling Method : ETS/STP/AIR-01
Sampling Machine Placed At Height : 1.5 METER FROM GROUND LEVEL
Weather Condition : CLEAR Ambient Temperature: 35.0 °C
Wind Direction : E To W
Equipment Used : Respirable Dust Sampler (PM₁₀) + Fine Particulate Sampler (PM_{2.5})

S. No.	Test Parameter	Unit	Result	Specification/Limit (As per CPCB)	Test Method
1	Particulate Matters,(PM ₁₀)	µg/m ³	87.3	For 24 Hrs =100	IS 5182 (Part-23)
2	Particulate Matters,(PM _{2.5})	µg/m ³	52.1	For 24 Hrs =60	IS 5182 (Part-24)
3	Sulphur Dioxide, (SO ₂)	µg/m ³	14.2	For 24 Hrs.=80	IS: 5182 (Part-2)
4	Nitrogen Dioxide,(NO ₂)	µg/m ³	36.2	For 24 Hrs.=80	IS: 5182 (Part-6)
5	Ammonia,(NH ₃)	µg/m ³	8.6	For 24 Hrs.=400	IS 5182 (Part-25)
6	Benzene,(C ₆ H ₆)	µg/m ³	< 1.0	For 24 Hrs.=5	IS 5182 (Part-11)
7	Ozone,(O ₃)	µg/m ³	< 5.0	For 8 Hrs.=100/ For 1 Hrs =18	IS: 5182 (Part-9)
8	Lead,(Pb)	µg/m ³	< 0.05	For 24 Hrs.=1	IS 5182 (Part-22)

Shriram Power & Steel Private Limited

CHECKED BY
SHRADDHA GUPTA



Authorized Signatory

Page 1 of 2

For Env...

AUTHORIZED SIGNATORY

Form No ETS/LAB/TR-01, Issue No. 05, Date 01.04.2019, Amd. No. 04 Date 01.04.2019

Note:-

1. Test reports without ETS LAB HOLOGRAM are not issued by our laboratory.
2. The results indicated only refer to the tested samples and listed applicable parameters.
3. No complaint will be entertained if received after 7 days of issue of test report.
4. Our liability is limited to invoice value only.
5. The sample shall be destroyed after 15 days & Biological / Perishable sample shall be destroyed immediately after issue of test report.
6. This test report shall not be used in any advertising media or as evidence in the court of Law without prior written permission of the laboratory.

APR 2023

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Plot No. 1/32, S.S. of G.T. Road Industrial Area, Ghaziabad (U.P.) - 201001

email : etslab2012@gmail.com | Website : www.etslab.in | Ph: 9911516076, 9811736063



TEST REPORT

TEST REPORT NO. ETS/1020/09/2023

DATE OF REPORT 25 09 2023

AMBIENT AIR MONITORING AND ANALYSIS REPORT

Name And Address of Customer

: SHRIRAM POWER & STEEL PVT LTD
ARA SARUBERA ROAD, NAYAMORE, P O KUJU, DIST RAMGARH
JHARKHAND 829122

Date of Monitoring : 16.09.2023
 Analysis Start Date : 19.09.2023
 Analysis End Date : 22.09.2023
 Duration Of Monitoring : 16.09.2023 To 17.09.2023
 Time Of Monitoring : 10.50 AM To 11.05 AM
 Sample ID No : 1020
 Sampling Done By : ETS STAFF
 Sampling Location : NEAR WEIGHT BRIDGE
 Sampling Method : ETS/STP/AIR-01
 Sampling Machine Placed At Height : 1.5 METER FROM GROUND LEVEL
 Weather Condition : CLEAR Ambient Temperature: 35.0 °C
 Wind Direction : E To W
 Equipment Used : Respirable Dust Sampler (PM₁₀) + Fine Particulate Sampler (PM_{2.5})

S. No.	Test Parameter	Unit	Result	Specification/Limit (As per CPCB)	Test Method
1	Particulate Matters.(PM ₁₀)	µg/m ³	94.8	For 24 Hrs.=100	IS 5182 (Part-23)
2	Particulate Matters.(PM _{2.5})	µg/m ³	53.4	For 24 Hrs.=60	IS 5182 (Part-24)
3	Sulphur Dioxide, (SO ₂)	µg/m ³	17.1	For 24 Hrs.=80	IS 5182 (Part-2)
4	Nitrogen Dioxide, (NO ₂)	µg/m ³	38.3	For 24 Hrs.=80	IS: 5182 (Part-6)
5	Ammonia, (NH ₃)	µg/m ³	11.5	For 24 Hrs.=400	IS 5182 (Part-25)
6	Benzene, (C ₆ H ₆)	µg/m ³	< 1.0	For 24 Hrs.=5	IS 5182 (Part-11)
7	Ozone, (O ₃)	µg/m ³	< 5.0	For 6 Hrs =100; For 1 Hrs =18	IS: 5182 (Part-9)
8	Lead, (Pb)	µg/m ³	< 0.05	For 24 Hrs =1	IS 5182 (Part-22)

Shriram Power & Steel Private Limited



Authorised Signatory

Page 1 of 2

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SHRADDHA GUPTA

For Signatory
AUTHORIZED SIGNATORY
Lab in-charge

Format No ETS/LAB/IR-01, Issue No 05, Date 01 04 2019, Amd. No 04 Date 01 04 2019

Note:-

1. Test reports without ETS LAB HOLOGRAM are not issued by our laboratory.
2. The results indicated only refer to the tested samples and listed applicable parameters.
3. No complaint will be entertained if received after 7 days of issue of test report.
4. Our liability is limited to invoice value only.
5. The sample shall be destroyed after 15 days & Biological / Perishable sample shall be destroyed immediately after issue of test report.
6. This test report shall not be used in any advertising media or as evidence in the court of Law without prior written permission of the laboratory.

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TEST REPORT

TEST REPORT NO.: ETS/1019/09/2023

DATE OF REPORT: 25.09.2023

AMBIENT AIR MONITORING AND ANALYSIS REPORT

Name And Address of Customer : SHRIRAM POWER & STEEL PVT LTD
ARA SARUBERA ROAD, NAYAMORE, P O KUJU DIST RAMGARH
JHARKHAND 829122

Date of Monitoring : 15.09.2023
Analysis Start Date : 19.09.2023
Analysis End Date : 22.09.2023
Duration Of Monitoring : 15.09.2023 To 16.09.2023
Time Of Monitoring : 11.30 AM To 11.40 AM
Sample ID No : 1019
Sampling Done By : ETS STAFF
Sampling Location : NEAR CANTEEN
Sampling Method : ETS/STP/AIR-01
Sampling Machine Placed At Height : 1.5 METER FROM GROUND LEVEL
Weather Condition : CLEAR Ambient Temperature: 35.0 °C
Wind Direction : E To W
Equipment Used : Respirable Dust Sampler (PM₁₀) + Fine Particulate Sampler (PM_{2.5})

S. No.	Test Parameter	Unit	Result	Specification/Limit (As per CPCB)	Test Method
1	Particulate Matters.(PM ₁₀)	µg/m ³	87.3	For 24 Hrs =100	IS 5182 (Part-23)
2	Particulate Matters.(PM _{2.5})	µg/m ³	48.6	For 24 Hrs =60	IS 5182 (Part-24)
3	Sulphur Dioxide, (SO ₂)	µg/m ³	15.7	For 24 Hrs =80	IS 5182 (Part-2)
4	Nitrogen Dioxide, (NO ₂)	µg/m ³	40.2	For 24 Hrs =80	IS 5182 (Part-6)
5	Ammonia, (NH ₃)	µg/m ³	9.3	For 24 Hrs =400	IS 5182 (Part-25)
6	Benzene, (C ₆ H ₆)	µg/m ³	< 1.0	For 24 Hrs =5	IS 5182 (Part-11)
7	Ozone, (O ₃)	µg/m ³	< 5.0	For 8 Hrs =100/ For 1 Hrs =18	IS 5182 (Part-9)
8	Lead, (Pb)	µg/m ³	< 0.05	For 24 Hrs =1	IS 5182 (Part-22)

Shriram Power & Steel Private Limited

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SHRADDHA GUPTA



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Page 1 of 2

For Enviro Tech Services
AUTHORIZED SIGNATORY
Lab In-charge

Format No ETS/LAB/TR-01, Issue No. 05, Date 01.04.2019, Amd No. 04 Date 01.04.2019

Note:-

1. Test reports without ETS LAB HOLOGRAM are not issued by our laboratory.
2. The results indicated only refer to the tested samples and listed applicable parameters.
3. No complaint will be entertained if received after 7 days of issue of test report.
4. Our liability is limited to invoice value only.
5. The sample shall be destroyed after 15 days & Biological / Perishable sample shall be destroyed immediately after issue of test report.
6. This test report shall not be used in any advertising media or as evidence in the court of Law without prior written permission of the laboratory.

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TEST REPORT

TEST REPORT NO ETS/1018/09/2023

DATE OF REPORT 25 09 2023

AMBIENT AIR MONITORING AND ANALYSIS REPORT

Name And Address of Customer : SHRIRAM POWER & STEEL PVT LTD
ARA SARUBERA ROAD, NAYAMORE, P O KUJU, DIST RAMGARH,
JHARKHAND 829122

Date of Monitoring : 15.09.2023
Analysis Start Date : 19.09.2023
Analysis End Date : 22.09.2023
Duration Of Monitoring : 15.09.2023 To 16.09.2023
Time Of Monitoring : 10.12 AM To 9.55 AM
Sample ID No : 1018
Sampling Done By : ETS STAFF
Sampling Location : NEAR MAIN GATE
Sampling Method : ETS/STP/AIR-01
Sampling Machine Placed At Height : 1.5 METER FROM GROUND LEVEL
Weather Condition : CLEAR Ambient Temperature: 35.0 °C
Wind Direction : E To W
Equipment Used : Respirable Dust Sampler (PM₁₀) + Fine Particulate Sampler (PM_{2.5})

S. No.	Test Parameter	Unit	Result	Specification/Limit (As per CPCB)	Test Method
1	Particulate Matters, (PM ₁₀)	µg/m ³	90.3	For 24 Hrs. = 100	IS 5182 (Part-23)
2	Particulate Matters, (PM _{2.5})	µg/m ³	53.1	For 24 Hrs. = 60	IS 5182 (Part-24)
3	Sulphur Dioxide, (SO ₂)	µg/m ³	14.8	For 24 Hrs. = 80	IS 5182 (Part-2)
4	Nitrogen Dioxide, (NO ₂)	µg/m ³	42.6	For 24 Hrs. = 80	IS 5182 (Part-6)
5	Ammonia, (NH ₃)	µg/m ³	10.1	For 24 Hrs. = 400	IS 5182 (Part-25)
6	Benzene, (C ₆ H ₆)	µg/m ³	< 1.0	For 24 Hrs. = 5	IS 5182 (Part-11)
7	Ozone, (O ₃)	µg/m ³	< 5.0	For 8 Hrs. = 100/ For 1 Hrs = 18	IS 5182 (Part -9)
8	Lead, (Pb)	µg/m ³	< 0.05	For 24 Hrs. = 1	IS 5182 (Part-22)

CHECKED BY
SHRADDHA GUPTA



Shriram Power & Steel Private Limited

Authorized Signatory
Page 1 of 2

For Enviro-Tech Services
AUTHORIZED SIGNATORY

Format No ETS/LAB/TR-01, Issue No. 05, Date 01/04/2019, Amd. No. 04 Date 01/04/2019

Note:-

1. Test reports without ETS LAB HOLOGRAM are not issued by our laboratory.
2. The results indicated only refer to the tested samples and listed applicable parameters.
3. No complaint will be entertained if received after 7 days of issue of test report.
4. Our liability is limited to invoice value only.
5. The sample shall be destroyed after 15 days & Biological / Perishable sample shall be destroyed immediately after issue of test report.
6. This test report shall not be used in any advertising media or as evidence in the court of Law without prior written permission of the Laboratory.

Signature

जिज्ञा खनन पदाधिकारी
रामगढ़



कार्यालय नगर परिषद रामगढ़।



पत्रांक.....853...../न0प0

प्रेषक,

प्रशासक
नगर परिषद रामगढ़।

सेवा में,

जिला खनन पदाधिकारी,
रामगढ़।

दिनांक 29/04/2024

विषय:-

नगर परिषद रामगढ़ कार्यालय अंतर्गत आगामी पाँच वर्षों में संचालन किये जाने वाले योजनाओं एवं उसमें उपयोग होने वाले खनिज पत्थर की मात्रा के संबंध में।

प्रसंग:-

जिला खनन कार्यालय का पत्रांक-323/खनन, दिनांक- 04.04.2024

महाशय,

उपरोक्त प्रसंगाधीन पत्र के आलोक में कहना है कि नगर परिषद रामगढ़ कार्यालय अंतर्गत आगामी पाँच वर्षों में संचालन किये जाने वाले योजनाओं में खनिज पत्थर की मात्रा लगभग 1000 m³ की आवश्यकता होगी।

क्र०सं०	खनिज पदार्थ का नाम	मात्रा
1	खनिज पत्थर	1000 m ³

विश्वासभाजन

fornish
29/04/2024

प्रशासक

नगर परिषद रामगढ़।



Scanned with OKEN Scanner

Asing

जिला खनन पदाधिकारी
रामगढ़

Mali Dahi
06/05/24

भारतीय राष्ट्रीय राजमार्ग
INDIAN NATIONAL HIGHWAYS

0000

कार्यपालक अभियंता का कार्यालय पथ निर्माण विभाग, पथ प्रमण्डल, रामगढ़।

गाँधी चौक, रामगढ़ धामा के सामने, रामगढ़ कैंट, जिला- रामगढ़, झारखण्ड- 829122, ई-मेल- eorc@ramgarh-ibr@nic.in

पत्रांक 326

दिनांक 09.05.2024

प्रेषक :- राजीव रंजन कुमार मुण्डा,
कार्यपालक अभियंता,
पथ प्रमण्डल, रामगढ़।

सेवा में,
जिला खनन पदाधिकारी
रामगढ़।

विषय :- आगामी पाँच वर्षों में संचालन किये जाने वाले योजनाओं एवं उसमें उपयोग होने वाले खनिज पत्थर की मात्रा उपलब्ध कराने के संबंध में।

प्रसंग :- आपका पत्रांक 323 दिनांक 04.04.2024

महाशय,

उपर्युक्त विषयक प्रासंगिक पत्र द्वारा वांछित प्रतिवेदन के संबंध में कहना कि पथ निर्माण विभाग में वर्षवार कार्य योजनाओं की स्वीकृति दी जाती है एवं योजना मद अन्तर्गत कार्यों की स्वीकृति के संबंध में मंत्रिमंडल (Cabinet) की बैठक में निर्णय लिये जाते हैं, जिससे आगामी पाँच वर्षों में संचालन किये जाने वाले योजनाओं से संबंधित स्पष्ट प्रतिवेदन समर्पित करने में कठिनाई होगी।

अतः विभाग स्तर पर स्वीकृत एवं स्वीकृति हेतु इस कार्यालय से समर्पित योजनाओं का प्रस्ताव के आधार पर विवरणी निम्न है :-

क्र०	योजना का नाम	उपयोग में होने वाली पत्थर खनीज की मात्रा		अभ्युक्ति
		Metal / Chips	Boulder	
1	Patratu - Saunda 'D' Road	4079 M ³	-	योजना स्वीकृत है।
2	Kuju - Ghato Road	13556 M ³	-	योजना स्वीकृत है।
3	Rajrappa - Chainpur (Old Alignment) Road	881 M ³	-	योजना स्वीकृत है।
4	Charhi - Ghato Road	3073 M ³	-	योजना स्वीकृत है।
5	Chas - Ramgarh Khand Road	2484 M ³	-	प्रस्ताव समर्पित है।
6	Saunda 'D' - Urimari Road	6654 M ³	-	प्रस्ताव समर्पित है।
7	Sandi - Bijulia Road	9439 M ³	-	प्रस्ताव समर्पित है।
8	Rajrappa - Dhobiyajara Road	5807 M ³	-	प्रस्ताव समर्पित है।
9	Barlanga - Nemra (Old Alignment) Road	2996 M ³	-	प्रस्ताव समर्पित है।
10	Ashok Cinema - Chhatarpur Road	9813 M ³	-	प्रस्ताव समर्पित है।
11	Gola - Charu Road	7124 M ³	-	कार्य प्रगति पर है।
12	Lalkighati - Chatarnandu via Linching Road	42393 M ³	6748 M ³	कार्य प्रगति पर है।
Total		108299 M ³	6748 M ³	

सूचना एवं अग्रतर कार्रवाई हेतु अग्रसारित।



जिला खनन पदाधिकारी,
रामगढ़

विश्वासभाजन

कार्यपालक अभियंता,

पथ प्रमण्डल, रामगढ़

वोट जैसा कुछ नहीं वोट जरूर डालेंगे

21/5/24

POTENTIAL ZONE IN THE DISTRICT

Potential Resource Area for stone mining in the district have been identified & marked, on a map.

This identification has been done on basis of ;

- Existence of closed mines
- Existence of running mines.
- Site visit to sites for which LoI have been issued by the District Mining office
- Applications have been, filed by prospective proponents on Raiyat land.
- Area identified by District Geology Dept.

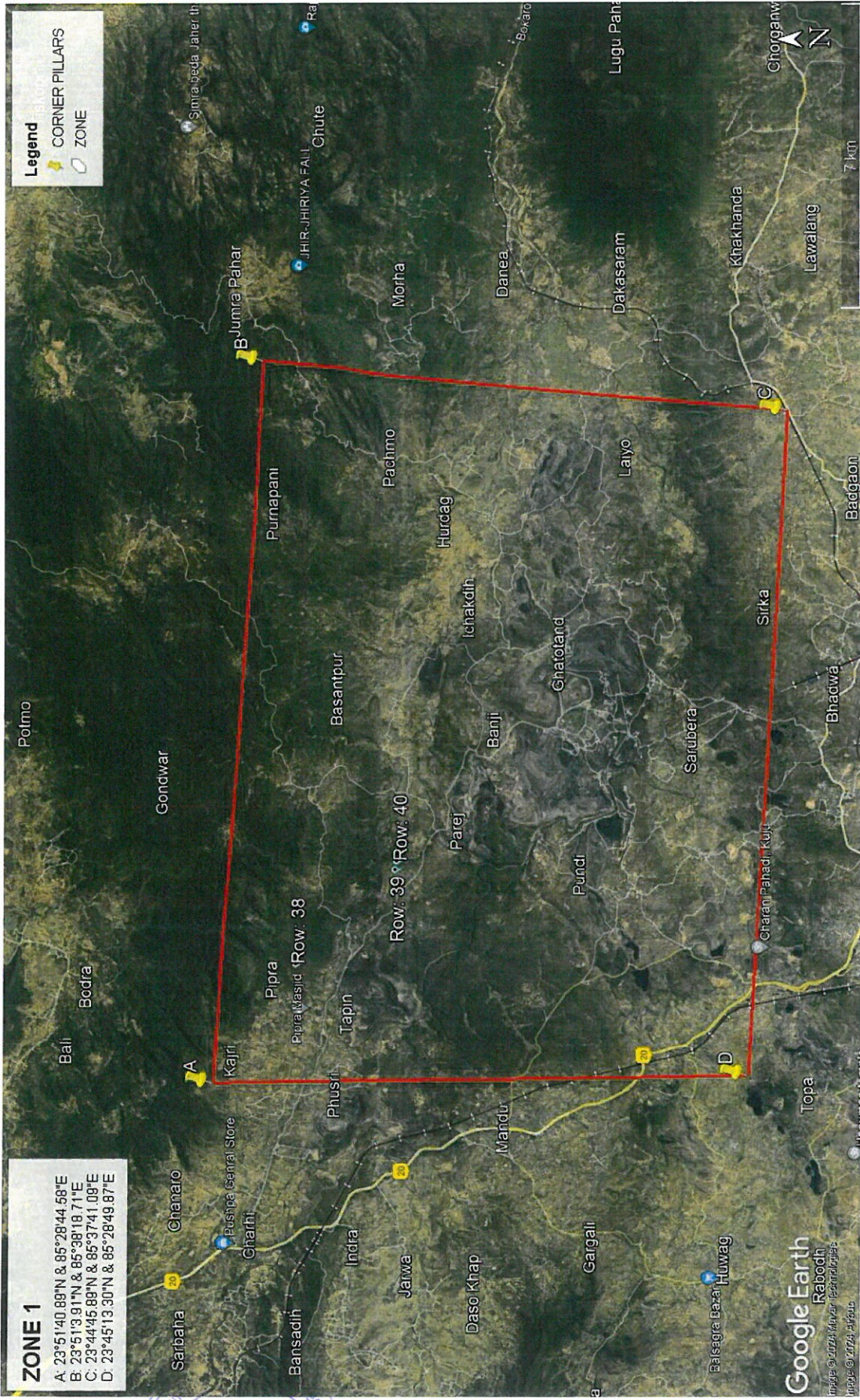
These for Resource Areas have been divided into zones. Every zone has been surveyed & limiting co-ordinates have been determined. All such zones are listed in the DSR.

These zones indicate areas where resource is available. However, while issuing LoI for mining, it must be ensured by the authority that mining area for which LoI is being issued must be complied to all statutory siting criteria prescribed by competent state/Central Govt. agency.

ZONE 1	A: 23°51'40.89"N & 85°28'44.58"E B: 23°51'3.91"N & 85°38'18.71"E C: 23°44'45.89"N & 85°37'41.09"E D: 23°45'13.30"N & 85°28'49.87"E
ZONE 2	A: 23°44'42.08"N & 85°13'49.84"E B: 23°41'36.92"N & 85°49'16.77"E C: 23°31'33.54"N & 85°48'10.06"E D: 23°33'52.69"N & 85°14'4.77"E
ZONE 3	A: 23°31'51.21"N & 85°34'42.95"E B: 23°30'45.27"N & 85°47'38.72"E C: 23°26'30.69"N & 85°46'52.65"E D: 23°27'46.82"N & 85°35'9.92"E



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जिला खनन पदाधिकारी
रामगढ़



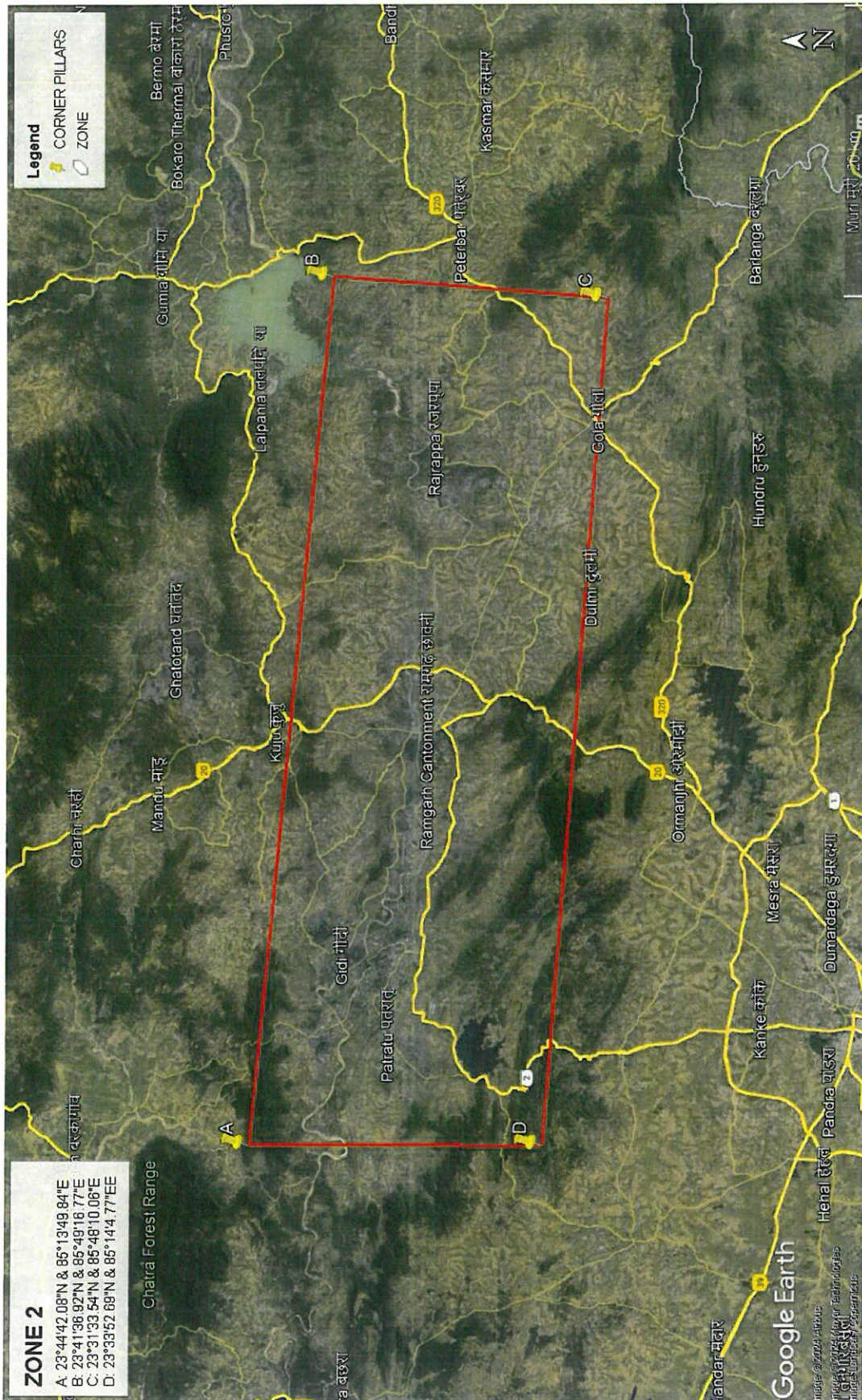
ZONE 1
 A: 23°51'40.89"N & 85°28'44.58"E
 B: 23°51'13.91"N & 85°38'18.71"E
 C: 23°44'45.88"N & 85°37'41.08"E
 D: 23°45'13.30"N & 85°28'49.87"E

Legend
 CORNER PILLARS
 ZONE



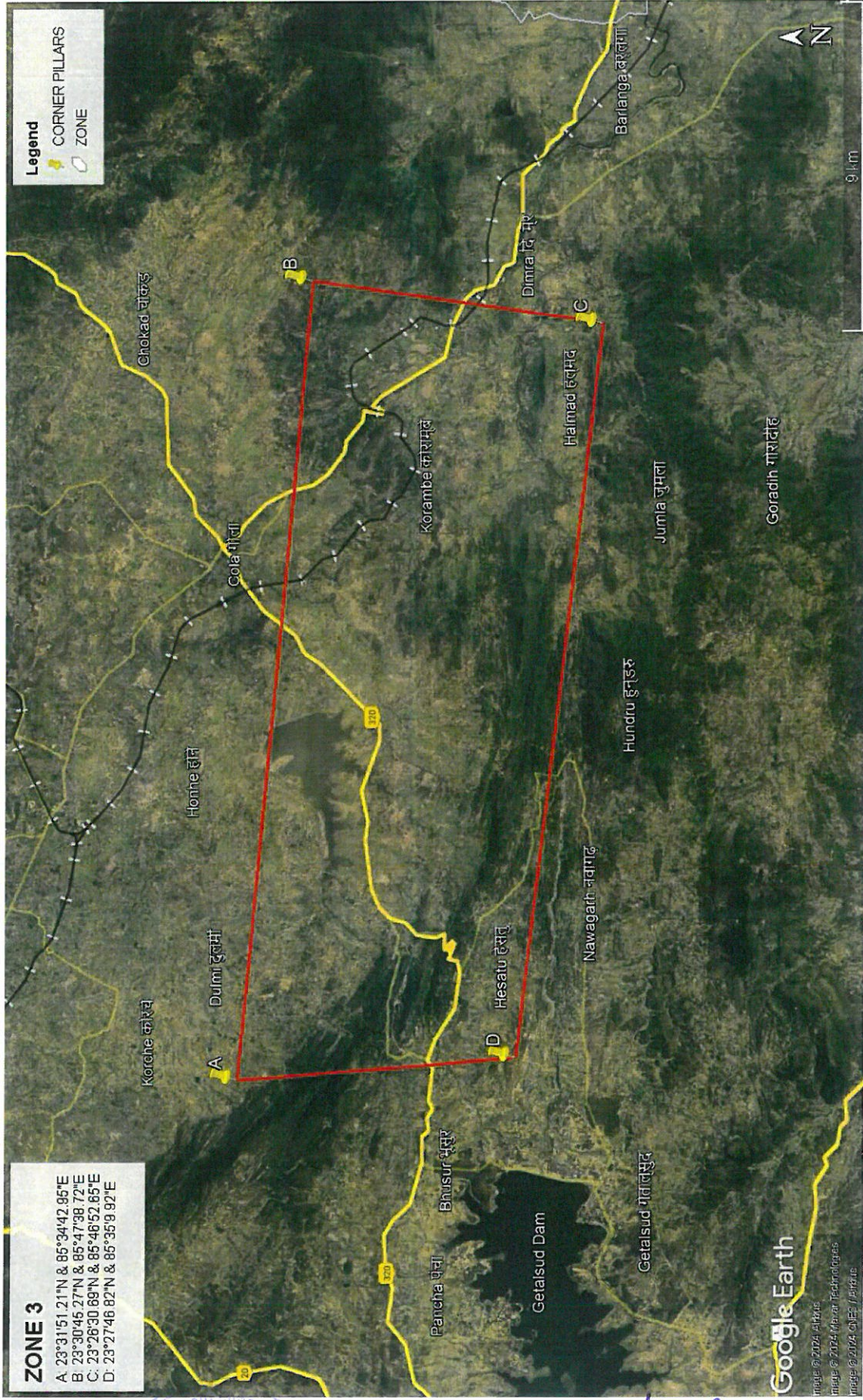
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**प्रिक्का खनन पदाधिकारी,
 रामगढ**



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पिढा खनन पदाधिकारी
 रामगढ

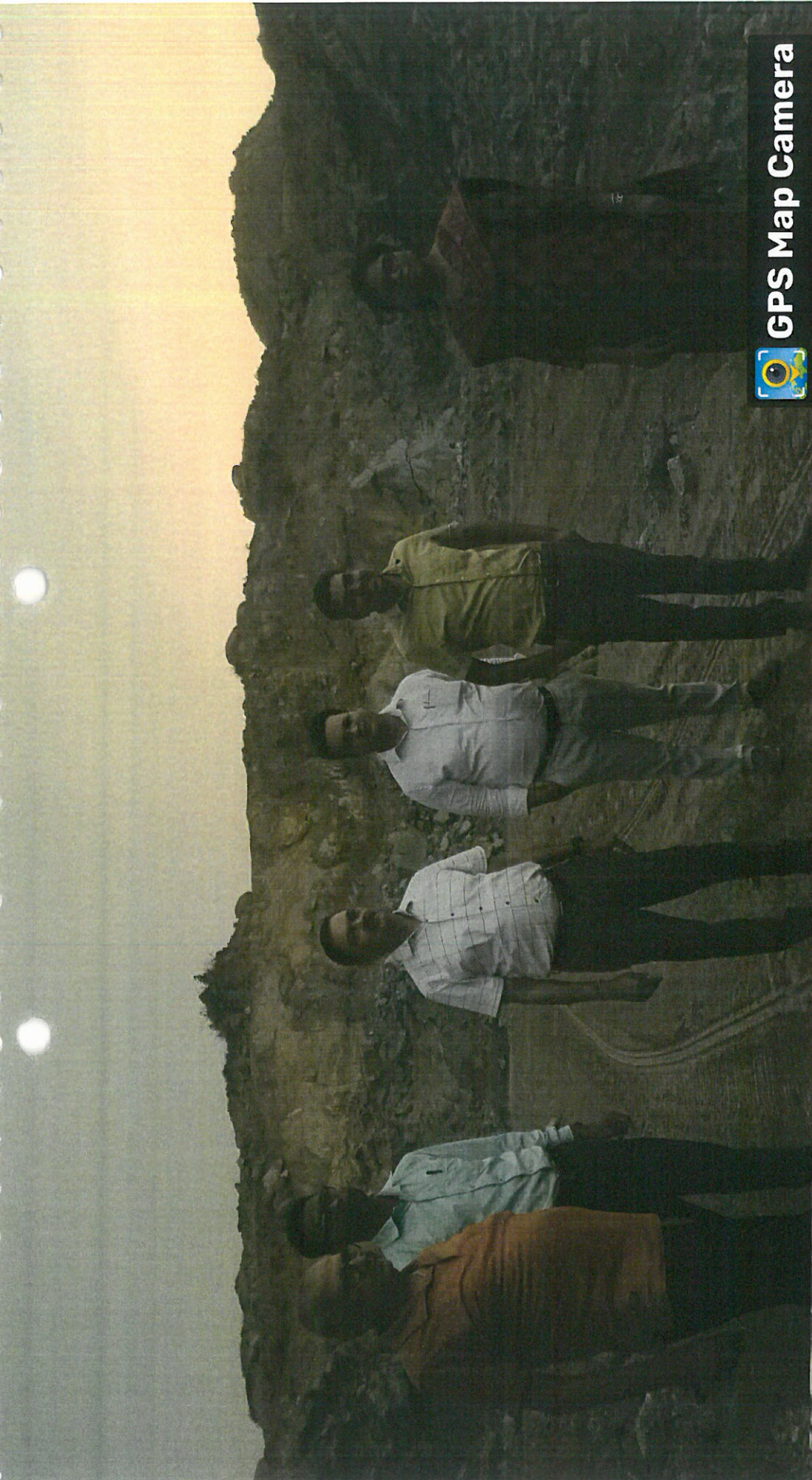


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 जिल्हा अन्न पदाधिकारी
 रामगढ



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जिला खनन पदाधिकारी
रामगढ़



GPS Map Camera



Soso, Jharkhand, India
HHFV+9F, Soso, Jharkhand 825101, India
Lat 23.574228°
Long 85.595778°
05/06/24 06:31 PM GMT +05:30



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जिल्हा खनन पदाधिकारी
रामगढ



 GPS Map Camera



Soso, Jharkhand, India
HHFV+9F, Soso, Jharkhand 825101, India
Lat 23.574176°
Long 85.595635°
05/06/24 06:32 PM GMT +05:30



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जिल्हा खनन पदाधिकारी
रामगढ



narzo 60x50
2024.05.10 13:05



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जिन्ना अन्नन पबिधिकारः
रामगढ

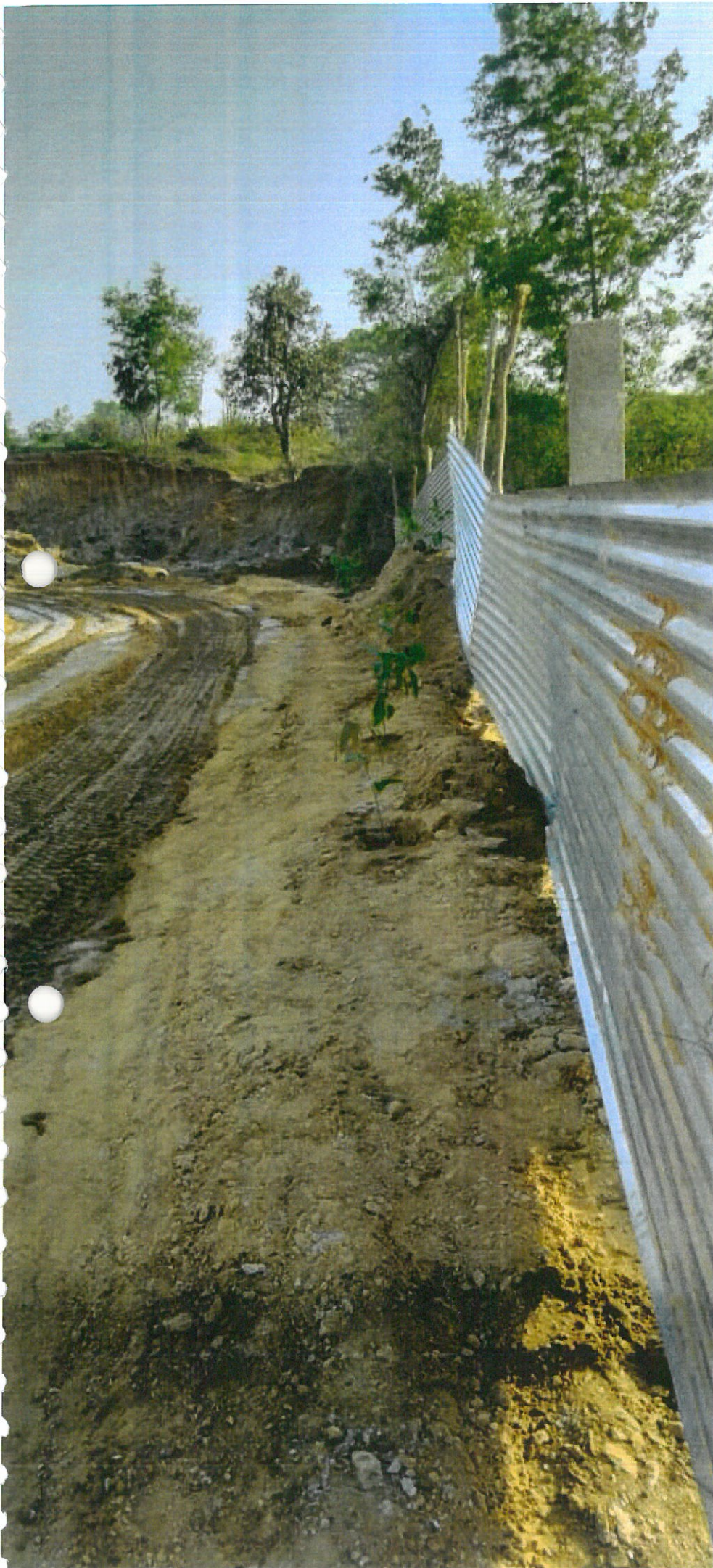


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2024.05.10 13:05



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जिल्हा अखिल पत्राधिकार
सामग्री



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जिल्हा अखनन पदाधिकारी
रामगढ



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जिला स्तर पर पदाधिकारी
रामगढ़

2024/5/10 14:49



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जिला अन्न पदाधिकारी
सम्राट

GPS Map Camera

Lalo, Jharkhand, India
HHCC+MX8, Lalo, Jharkhand 825101, India
Lat 23.569679°
Long 85.570698°
01/12/23 05:07 PM GMT +05:30



Google



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ଅନୁମତି ପ୍ରଦାନକାରୀ
ସାମଗ୍ରୀ

GPS Map Camera



Lalo, Jharkhand, India
Unnamed Road, Lalo, Jharkhand, India
Lat 23.564254°
Long 85.563502°
01/12/23 05:19 PM GMT +05:30



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जिल्हा आनन पढायाकार
सामगर्

GPS Map Camera

Ghaghra, Jharkhand, India
Unnamed Road, Ghaghra, Jharkhand 829110, India
Lat 23.456445°
Long 85.719866°
01/12/23 03:25 PM GMT +05:30





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जिला स्तर पर पत्राधिकारः
सामगढ़

GPS Map Camera



Korambe, Jharkhand, India
FQ82+35V, Korambe, Jharkhand 829110, India
Lat 23.463507°
Long 85.749708°
01/12/23 03:03 PM GMT +05:30



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GPS Map Camera



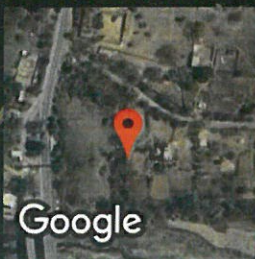
Pindra, Jharkhand, India
Tapin north pindra, Pindra, Jharkhand 825326, India
Lat 23.833339°
Long 85.506952°
28/11/23 04:04 PM GMT +05:30

जिना अनन पवाधकार
रामगढ



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GPS Map Camera




Talapur Talatanr, Jharkhand, India
H7JF+P2M, Talapur Talatanr, Jharkhand 829119, India
Lat 23.58187°
Long 85.273505°
28/11/23 09:20 AM GMT +05:30

बिना खनन पत्राधिकारों
समगढ़



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 GPS Map Camera



Talapur Talatanr, Jharkhand, India
H7JF+P2M, Talapur Talatanr, Jharkhand 829119, India
Lat 23.581905°
Long 85.273519°
28/11/23 09:22 AM GMT +05:30

प्रिजा आनन पब्लिकारि
रामगढ



उपायुक्त-सह-जिला दण्डाधिकारी का कार्यालय रामगढ़।

(खनन शाखा)

दिनांक 05.06.2024 को उपायुक्त रामगढ़ की अध्यक्षता में पत्थर खनिज का DSR के Subdivisional Committee के साथ की गयी बैठक की कार्यवाही -

उपस्थिति -

1. उपायुक्त, रामगढ़।
 2. वन प्रमण्डल पदाधिकारी, रामगढ़।
 3. अनुमण्डल पदाधिकारी, रामगढ़।
 4. जिला खनन पदाधिकारी, रामगढ़।
 5. क्षेत्रीय पदाधिकारी, झारखण्ड राज्य प्रदूषण नियंत्रण पर्षद, रामगढ़।
 6. सहायक निदेशक, भूतत्व, जिला भूतात्विक कार्यालय, हजारीबाग।
 7. कार्यपालक अभियंता, लघु सिंचाई प्रमण्डल, रामगढ़।
1. सर्वप्रथम बैठक में सभी का स्वागत करते हुये बैठक की कार्यवाही आरम्भ की गयी।
 2. जिला खनन पदाधिकारी, रामगढ़ द्वारा बताया गया कि राज्य स्तरीय पर्यावरण समाघात निर्धारण प्राधिकरण, झारखण्ड (SEIAA) के पत्रांक 71 दिनांक 03.05.2023 द्वारा सूचित किया गया है कि जिन जिलों का District Survey Report की अवधि 05 वर्ष हो गयी है उनको update किया जाना है। रामगढ़ जिला का पत्थर खनिज का DSR दिनांक 16.11.2018 को अनुमोदित हुआ था। जिसकी अवधि दिनांक 15.11.2023 को समाप्त हो चुकी है। तदालोक में उक्त DSR को Update किये जाने की कार्रवाई की जा रही है।
 3. DSR हेतु गठित Sub-Divisional Committee द्वारा आवश्यक संशोधनों के साथ पत्थर का Updated DSR MOEF के Notification No. S.O.3611(E) New Delhi Dated 25th of July 2018 के आलोक में तैयार किया गया है, जिसे जिला के Website पर Public comments हेतु 21 दिनों के लिये Publish किया गया। उक्त के उपरान्त कतिपय बिन्दुओं पर DSR को अद्यतन किया गया है।
 4. DSR की प्रति एवं संबंधित दस्तावेज Sub divisional Committee के सभी सदस्यों को पूर्व में प्रेषित है।



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**जिला खनन पदाधिकारी
रामगढ़**

5. उपायुक्त, रामगढ़ द्वारा Committee के समक्ष उपलब्ध कराये गये DSR के बावत सभी सदस्यों से राय/सुझाव की पृच्छा की गई, जिस पर उपस्थित सभी सदस्यों द्वारा DSR पर हस्ताक्षर करते हुये अनुमोदन प्रदान किया गया तथा सर्वसम्मति से सदस्य, सचिव, SEIAA को अग्रसारित करने का निर्णय लिया गया।
6. बैठक के अन्त में DSR के प्रत्येक पन्ना पर हस्ताक्षर करने हेतु जिला खनन पदाधिकारी, रामगढ़ को प्राधिकृत किया गया एवं धन्यवाद ज्ञापन के साथ बैठक की कार्यवाही समाप्त की गयी।

MP 884

क्षेत्रीय पदाधिकारी,
झारखण्ड राज्य प्रदूषण
नियंत्रण पर्षद,
हजारीबाग।

Dr. Arun

कार्यपालक अभियंता,
लघु सिंचाई प्रमण्डल,
रामगढ़।

Anima Kals

सहायक निदेशक, भूतत्व,
जिला भूतात्विक कार्यालय,
हजारीबाग।

Asing

जिला खनन पदाधिकारी,
रामगढ़।

Ro

अनुमण्डल पदाधिकारी,
रामगढ़।

Kishu

वन प्रमण्डल पदाधिकारी,
रामगढ़।

Chandan
05/06/24

उपायुक्त,
रामगढ़।

ज्ञापांक : 695 / खनन, रामगढ़; दिनांक : 05.06.2024.

प्रतिलिपि :- सभी संबंधित पदाधिकारी को सूचनार्थ एवं आवश्यक कार्रवाई हेतु प्रेषित।

Chandan
05/06/24

उपायुक्त,
रामगढ़।



Asing

जिला खनन पदाधिकारी,
रामगढ़

CHAPTER- II

FLORA AND FAUNA

CHAPTER II A- Forest Flora

1.2A.1 TREES

Descriptive details of commonly found tree species in the Division along with its floristic composition, taxonomical features and economic importance in life of the people elucidated below.

Common name: Sal • Hindi: Sal
Botanical name: *Shorea robusta*
Family: *Dipterocarpaceae*

Sal is moderate to slow growing tree, which can grow up to 30-35 m tall, with a trunk diameter of up to 2-2.5 m. The bark of the young tree is smooth with a few long deep and vertical furrows. The leaves are ovate-oblong, 10-25 cm long and 5-15 cm broad. In wetter areas, it is evergreen in drier areas, it is dry-season deciduous, shedding most of the leaves in between February to April, leafing out again in April and May. The sal flowers, whitish in color, appear in early summer. These are borne in raceme-like panicles in leaf axils, covered with white pubescence. Sal is one of the most important sources of hardwood timber in India, with hard, coarse-grained wood that is light in colour when freshly cut, and becoming dark brown with exposure. The wood is resinous and durable, and is most sought after for construction works, although not well suited to planning and polishing. Sal trees are found from Burma in the East, to Assam, Bengal, Nepal, the Deccan Plateau, going up to the foothills of the Shivaliks on the left bank of the Yamuna river.

Season of Flowering: April-May.

Common name: Teak, Sagaun (Hindi),
Botanical name: *Tectona grandis*
Family: *Verbenaceae*

A very popular timber tree, teak is native to India and Burma to Java. It is a deciduous tree attaining a very large size. However, in cities it might be seen on the roadside as a medium sized tree with large leaves. Teak is considered a good quality wood for furniture. Leaves of the tree are opposite, 30-60 cm long and 15-30 cm broad. The flowers come in large numbers in lax clusters at the end of branches. They are white and rather small - about 6 mm across. The fruit is about 15 mm across, spongy, enclosed in the persistent calyx. Flowers appear in monsoon, fruit ripens in winter. From November to January, the tree is leafless. *ASIB*



Common name: Mango • Hindi: आम
Botanical name: *Mangifera indica*
Family: *Anacardiaceae* (Cashew family)

It is a matter of astonishment to many that the delicious mango, one of the most celebrated of Indian fruits, is a member of the family Anacardiaceae notorious for embracing a number of highly poisonous plants. The mango tree is erect, 30 to 100 ft high, with a broad, rounded canopy which may, with age, attain 100 to 125 ft in width, or a more upright, oval, relatively slender crown. In deep soil, the taproot descends to a depth of 20 ft, the profuse, wide spreading, feeder root system also sends down many anchor roots which penetrate for several feet. The tree is long-lived, some specimens being known to be 300 years old and still fruiting. Nearly evergreen, alternate leaves are borne mainly in rosettes at the tips of the branches and numerous twigs from which they droop like ribbons on slender petioles 1 to 4 in long. Hundreds and even as many as 3,000 to 4,000 small, yellowish or reddish flowers, 25% to 98% male, the rest hermaphrodite, are borne in profuse, showy, erect, pyramidal, branched clusters 2 1/2 to 15 1/2 in high. There is great variation in the form, size, color and quality of the fruits. They may be nearly round, oval, ovoid-oblong, or somewhat kidney-shaped, often with a break at the apex, and are usually more or less lop-sided.

Common name: Neem • Hindi: नीम
Botanical name: *Azadirachta indica*
Family: *Meliaceae* (Neem family)
Synonyms: *Melia azadirachta*, *Antelaea azadirachta*

Neem is native to India and Burma. It is the state tree of Andhra Pradesh. Neem is a fast growing tree that can reach a height of 15-20 m, rarely to 35-40 m. It is evergreen but under severe drought it may shed most or nearly all of its leaves. The branches are wide spread. The fairly dense crown is roundish or oval and may reach the diameter of 15-20 m in old, free standing specimens. The trunk is relatively short, straight and may reach a diameter of 1.2 m. The bark is hard, fissured or scaly, and whitish grey to reddish-brown. The sapwood is greyish white and the heart wood reddish when first exposed to the air becoming reddish brown after exposure. The root system consists of a strong tap root and well developed lateral roots. The alternate, pinnate leaves are 25-45 cm long, with 25-31 medium to dark green leaflets about 1-2 cm long. The leaflets are ovate or elliptic, with a base that is more or less asymmetric, and their margins are serrated. The flowers are small, fragrant, are arranged axillary, normally more or less decussate panicles which are 10-15 cm long. The inflorescence, which branches up to the third degree, bears 150-250 flowers. The flowers are 1-2 cm in diameter. The fruit is a globose drupe 1.5-2.5 cm in diameter, 1-2 cm in length, and when ripe has a 1-2 cm diameter. The fruit is difficult to eat.



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many benefits, the one that is most unusual
household pests. Some entomologists now conclude that neem has such remarkable
controlling insects that it will usher in a new era in safe, natural pesticides

Common name: Chironji Tree, Hindi: char, Piar.
Botanical name: *Buchanania lanzan*
Family: *Anacardiaceae* (Cashew family)
Synonyms: *Buchanania latifolia*, *Chironjia sapida*

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Chironji Tree is a medium-sized deciduous tree, growing to about 50 ft tall. It bears fruit
containing a single seed, which is popular as an edible nut, known as *chironji*. It is common
forests mostly in eroded ravine lands. It avoids waterlogged areas, but occurs locally in
bare hill slopes. It has tickly leathery leaves which are broadly oblong, with blunt tip at
base. Leaves have 10-20 pairs of straight, parallel veins. Pyramidal panicles of greenish
flowers appear in early spring. Fruits ripen from April to May and remain on the tree for
long time. Flowering : January - March.

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Medicinal uses: The roots are acrid, astringent, cooling, depurative and constipating, and
useful in treatment of diarrhoea. Leaves are used in the treatment of skin diseases. Fruit
in treating cough and asthma.

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Common name: Flame of the Forest • Hindi: Palash, Dhak, Tesu
Botanical name: *Butea monosperma*
Family: *Fabaceae* (pea family)
Synonyms: *Butea frondosa*, *Erythrina monosperma*, *Plaso monosperma*

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Native to India and state tree of Jharkhand State, the flame of the Forest is a medium
growing from 20 to 40 feet high, and the trunk is usually crooked and twisted with
branches and rough, grey bark. The leaves are pinnate, with an 8-16 cm petiole and three
each leaflet 10-20 cm long. The hindi phrase ("*Dhaak ke teen paat*") comes from the
three leaflets of this tree. It is seen in all its ugliness in December and January when
leaves fall: but from January to March it truly becomes a tree of flame, a riot of
vermillion flowers covering the entire crown. These flowers, which are scentless,
along the ends of the stalks--dark velvety green like the cup-shaped calices--and the
the stiff, bright flowers is shown off to perfection by this deep, contrasting colour.
consists of five petals comprising one standard, two smaller wings and a very
shaped keel. It is this keel which gives it the name of Parrot Tree. In olden days,
use of the wood of this tree with beautiful flowers- when a member of the Meitei co



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and, for some reasons, his body cannot be found, the wood of this tree is cremated in place of the body. A postal stamp was issued by the Indian Postal Department to commemorate this flower.

Common name: Silk Cotton Tree, Kapok Tree • Hindi: Shalmali,

Botanical name: *Bombax ceiba*

Family: *Bombacaceae* (baobab family)

Synonyms: *Salmalia malabarica*

Silk cotton tree is a type of native cotton tree with large red flowers. The genus name *Salmalia* is derived from the Sanskrit name *shaalmali*. Silk cotton trees comprise eight species in the genus *Bombax*, native to India, tropical southern Asia, northern Australia and tropical Africa. Semul trees bear beautiful red-colored flowers during January to March. The phenomenon paints the whole landscape in an enchanting red hue. The fruit, the size of a ping-pong ball, on maturity appears during March and April. These are full of cotton-like fibrous stuff. It is for the fiber that villagers gather the semul fruit and extract the cotton substance called "kopak". This substance is used for filling economically priced pillows, quilts, sofas etc. The fruit is cooked and eaten and also pickled. Semul is quite a fast growing tree and can attain a girth of 2 to 3 m, and height about 30 m, in nearly 50 years or so. Its wood, when sawn fresh, is white in color. However, with exposure and passage of time it grows darkish gray. It is as light as 10 to 12 kg, per cubic foot. It is easy to work but not durable anywhere other than under water. So it is popular for construction work, but is very good and prized for manufacture of plywood, match boxes and sticks, scabbards, patterns, moulds, etc. Also for making canoes and light duty boats and other structures required under water. *Bombax* species are used as food plants by the larvae of some Lepidoptera species including the leaf-miner *Bucculatrix crateracma* which feeds exclusively on *Bombax ceiba*.

Botanical name: *Ceiba insignis*

Family: *Bombacaceae*

Synonyms: *Chorisia insignis*

Like its more popular cousin, the pink Floss Silk Tree, this one has a green and variably spiny trunk. This species almost always has a very spiny trunk, while you can find many *C. speciosas* with smooth green trunks. The main visible difference between the two are the showy white flowers, with a golden throat. This deciduous tropical from Brazil and Argentina is mostly seen as a small tree. It has pale green leaves palmately divided into 5-7 pointed leaflets. After blooming, pear shaped fruits appear which have a silky floss on the seeds, hence the name



Common name: Arjun • Hindi: Arjun
Botanical name: *Terminalia arjuna*
Family: *Combretaceae* (rangoon creeper family)

In Indian mythology, Arjun is supposed to be Sita's favourite tree. Native to India, the tree attracts lot of attention because of its association with mythology and its many uses. Arjuna is a large, evergreen tree, with a spreading crown and drooping branches. Grows up to 25 m height and the bark is grey and smooth. Leaves are sub-opposite, 5-14 × 2-4.5 cm in size, oblong or elliptic oblong. Flowers small, white, and occur on long hanging racemes. Fruit is 2.3-3.5 cm long, fibrous woody, glabrous and has five hard wings, striated with numerous curved veins. Flowering time of the tree is April-July, in Indian conditions. **Medicinal uses:** Every part of the tree has useful medicinal properties. Arjun holds a reputed position in both Ayurvedic and Yunani Systems of medicine. According to Ayurveda it is alexiteric, styptic, tonic, anthelmintic, and useful in fractures, ulcers, heart diseases, biliousness, urinary discharges, asthma, tumors, leucoderma, anaemia, excessive perspiration etc. According to Yunani system of medicine, it is used both externally and internally in gleans and urinary discharges.

Common name: Chebulic Myrobalan, Myrobalan • Hindi: Harra, Harad
Botanical name: *Terminalia chebula*
Family: *Combretaceae* (Rangoon creeper family)

Chebolic Myrobalan is a flowering evergreen tree called in English the Myrobalan or sometimes the Chebulic Myrobalan. It is native to the Indian subcontinent and the adjacent areas such as Pakistan, Nepal and the south-west of China stretching as far south as Kerala or even Sri Lanka where is called Aralu. This tree yields smallish, ribbed and nut-like fruits which are picked up when still green and then pickled, boiled with a little added sugar in their own syrup or used in preserves or concoctions. The seed of the fruit, which has an elliptical shape, is an abrasive pit enveloped by a fleshy and firm pulp. Chebulic Myrobalan can reach heights of 20 meters.

Medicinal uses: Chebulic Myrobalan is highly regarded as the 'king of medicines' in the Ayurvedic Medicine. It is reputed to cure blindness and it is believed to inhibit the growth of the malignant tumors. It is allegedly also a powerful detox agent.

Common name: Baheda, Belliric Myrobalan, Beach almond
• Hindi: Bahera,

Botanical name: *Terminalia bellirica*
Family: *Combretaceae* (Rangoon creeper family)
Synonyms: Myrobalanus bellirica

Baheda is a tall handsome tree, with characteristic bark, 12-50 m tall. Leaves are alternately arranged or fascicled at the end of branches, elliptic or elliptic obovate leaf



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Leaf tip is narrow- pointed or rounded. Leaves are 8-20 cm long, 7.5-15 cm wide, on stalks 2.15 cm long. Flowers arise in spikes in leaf axils, 5-15 cm long. Flowers are greenish yellow, 5-6 mm across, stalkless, upper flowers of the spike are male, lower flowers are bisexual. Stamens are 3-4 mm long. Fruit is obovoid 1.5-2.5 cm in diameter, covered with minute pale pubescence, stone very thick, indistinctly 5 angled.

Medicinal uses: In traditional Indian Ayurvedic medicine, Baheda is known as "Bibhitaki;" in its fruit form it is used in the popular Indian herbal rasayana treatment triphala. This species is used by some tribes in the Indian subcontinent for its mind-altering qualities - they smoke dried kernels. Too much of this can cause nausea and vomiting.

Common name: Amla, Indian gooseberry • Hindi: Aonla

Botanical name: *Phyllanthus emblica*

Family: *Phyllanthaceae* (Amla family)

Synonyms: *Emblica officinalis*

Amla is a small to medium sized deciduous tree, reaching 8 to 18 m in height, which is known for its edible fruit of the same name. The tree has crooked trunk and spreading branches. The leaves are simple, nearly stalkless and closely set along slender branchlets. The leaves are often mistaken for leaflets of pinnate leaves. The genus name *Phyllanthus* is derived from Greek words meaning leaf-flower, an allusion to the apparent bearing of flowers on the leaves. Amla flowers are small, greenish-yellow or pinkish. The flowers have six segments, but no real petals. Male and female flowers are carried separately on the same branch. The fruit is nearly spherical, light greenish yellow, quite smooth and hard on appearance, with 6 vertical stripes or furrows. Ripening in autumn, the berries are harvested by hand after climbing to upper branches bearing the fruits. The taste of Amla is sour, bitter and astringent, and is quite fibrous. In India, it is common to eat gooseberries with salt and water to make the sour fruits palatable.

Amla is an important constituent of Trifala, the combination of three fruits – the other two being Harra and Baheda. It is considered to be most important in ayurvedic formulations capable of complete renovation of the digestive system.

Common name: Amaltas, Golden shower tree, Indian Laburnum • Hindi: Amaltas

Botanical name: *Cassia fistula*

Family: *Caesalpinaceae* (Gulmohar family)

This native of India, commonly known as *Amaltaas*, is one of the most beautiful of all tropical trees when it sheds its leaves and bursts into a mass of long, grape-bunches like yellow gold flowers. A tropical ornamental tree with a trunk consisting of hard reddish wood, growing up to 40 feet tall. The wood is hard and heavy; it is used for cabinet, inlay work, etc. It has showy



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and butterflies. The fruits are dark-brown cylindrical pods, also 2' long, which also hold the flattish, brown seeds (up to 100 in one pod) These seeds are in cells, each containing a single seed. A postal stamp was issued by the Indian Postal Department to commemorate this tree.

Medicinal uses: The sweet blackish pulp of the seedpod is used as a mild laxative.

Common name: Anjan • Hindi: Anjan
Botanical name: *Hardwickia binata*
Family: *Caesalpiniaceae* (Gulmohar family)

Anjan is a medium or large deciduous ornamental tree. It is a native of India. Graceful, drooping slender branches; crown conical in early life, becoming broader later. Bark of saplings almost silvery white and smooth, gradually changing as the tree gets older to dark grey and rough with irregular vertical cracks, 1.2-2.5 cm thick, exfoliating in narrow flakes. In isolated situations, or on poor soils, the tree tends to branch low down and produce a short bole, but when grown in a fairly crowded crop on favourable soil it produces a long, straight, cylindrical bole with an elevated crown. Leaves small, 2-6 cm long by 2-3 cm wide, alternate, pinnate, almost kidney shaped and grayish-green. Flowers small, pale yellowish-green in axillary and terminal lax paniced racemes. The pod flat and samaroid, 5-7.6 x 1-1.5 cm, oblong lanceolate, coriaceous, narrowed at both ends, with parallel longitudinal veins, containing 1 seed near the apex.

Common name: Gum Arabic, Babool (Hindi), Kikar (Hindi), Babul
Botanical name: *Acacia nilotica subsp. indica*
Family: *Mimosaceae* (Touch-me-not family)

Babool is a medium to large tree, native to West Asia that can reach a height of 10 m, with an average of 4-7 m in height. The crown is somewhat flattened or rounded, with a moderate density. The branches have a tendency to droop downwards if the crown is roundish. The bark is blackish grey or dark brown in mature trees and deeply grooved, with longitudinal fissures. The young branches are smooth and grey to brown in colour. The young twigs are covered in short hairs. Paired, slender, straight spines grow from a single base and sometimes curve backwards, are up to 80 mm long and whitish but often reddish brown in colour. The leaves are twice compound, i.e. they consist of 5-11 feather-like pairs of pinnae; each pinnae is further divided into 7-25 pairs of small, elliptic leaflets that can be bottle to bright green in colour. Flowers are bright yellow, numerous, in fluffy globular heads 1.2 cm diameter, usually in clusters of 2 to 6, on individual pubescent axillary stalks 1.5 to 2 cm long.

Babool barks possess astringent properties and considered to be good for teeth. Many ayurvedic companies have introduced tooth paste by its name. The barks are also used for tanning of hides in tanneries. It is not very good timber, but used for making spokes in the wheels of bullock carts and low caste house construction. The babool trees also yield very good gum.

many ages. Perhaps the most amazing part of this extraordinary tree is its flower. What we think of as the fruit is really a hollow, flower-bearing structure called a cyconia. The inside is lined with hundreds of male and female flowers. The males carry pollen and the females bear seeds. Various parts of this plant are considered medicinal. The bark of this therapeutically valuable tree is attributed with tonic, astringent, cooling and diuretic properties in Ayurveda. A postal stamp was issued by the Indian Postal Department to commemorate this tree.

Common name: Gum Arabic Tree, Gum Acacia, Gum Senegal Tree

Hindi: Kumttha, Kumat

Botanical name: *Acacia senegal*

Family: *Mimosaceae* (Touch-me-not family)

Synonyms: *Acacia verck*

Gum Arabic Tree is a small deciduous acacia tree, native to semi-desert regions of Sub-Saharan Africa, Pakistan, and northwestern India. It grows to a height of 5-12m, with a trunk up to 30 cm in diameter. Thorns are placed just below the nodes, either in threes up to 7 mm long, with the middle one hooked downwards and the lateral ones curved upwards, or solitary with the laterals absent. Leaves are double-compound, up to 2.5 cm long. Leaf-axis is finely downy with 2 glands; pinnae are 6-20 pairs; leaflets are small, 7-25 pairs, rigid, leathery, smooth, linear to elliptic-oblong, ciliate on margins, pale glaucous-green, tip blunt to somewhat pointed. Flowers are borne in not very dense spikes 5-10 cm long, carried on stalks 0.7-2 cm long. Flowers are normally produced with the leaves. Sepal cup is bell-shaped, glabrous, deeply toothed. Flowers are white to yellowish, fragrant, stalkless. Pod is straight or slightly curved, retrap-shaped, 7.5-18 cm long, 2.5 cm wide, thin, light brown or gray, papery or woody, firm, smooth. The tree produces gum arabic, which is used as a food additive, in crafts, and as a cosmetic. The gum is dried from cuts in the bark, and an individual tree will yield 200 to 300 grams. Seventy percent of the world's gum arabic is produced in Sudan. Flowering takes place between: January - March.

Medicinal uses: The gum is used for soothing mucous membranes of the intestine and to treat inflamed skin. It is also reportedly used as for its astringent properties, to treat bleeding, bronchitis, diarrhea, gonorrhea, leprosy, typhoid fever and upper respiratory tract infections.

Common name: Earleaf Acacia, Ear-pod Wattle, Northern Black Wattle

Botanical name: *Acacia auriculiformis*

Family: *Mimosaceae* (touch-me-not family)

Earleaf Acacia is an evergreen, unarmed tree to 15 m (50 ft) tall, with compact spread, often multi-stemmed; young growth glaucous. Leaves alternate, simple, reduced to phyllodes (flattened leaf stalks), these blade-like, slightly curved, 5-8 in long. Flowers in loose, yellow-orange spikes at leaf axils or in clusters of spikes at stem tips; flowers mimosa-like, with numerous free



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Common name: Flame Tree, Royal Poinciana • Hindi: Gulmohar
Botanical name: *Delonix regia*
Family: *Caesalpinaceae* (Gulmohar family)

Discovered in the early 19th century in its native Madagascar by botanist Wensel Bojer. Gulmohar is a flamboyant tree in flower - some say the world's most colorful tree. For several weeks in spring and summer it is covered with exuberant clusters of flame-red flowers, 4-5 cm across. Even up close the individual flowers are striking: they have four spoon shaped spreading scarlet or orange-red petals about 3 cm long, and one upright slightly larger petal (the standard) which is marked with yellow and white. The delicate, fern-like leaves are composed of small individual leaflets, which fold up at the onset of dusk. Gulmohar gets 30-40 ft tall, but its elegant wide-spreading umbrella-like canopy can be wider than its height. Gulmohar is naturalized in India and is widely cultivated as a street tree.

Common name: White Bark Acacia, Brewers acacia, distillers acacia Hindi: safed babul,
Botanical name: *Acacia leucophloea*
Family: *Mimosaceae* (Touch-me-not family)
Synonyms: *Mimosa leucophloea*

White Bark Acacia is a large thorny tree attaining a height of 35 m and a diameter at breast height of 100 cm. The stout trunk is divided into several wide branches. Open-grown specimens have a characteristic wide umbrella-like crown. Bark is white to yellowish gray, smooth, on old trees becoming black and rough. Leaves double compound, with 4-13 pairs of pinnae, each with 5-30 pairs of leaflets. Circular glands found on the rachis below the junction of paired-pinnae. The feathery green foliage offers a strong contrast to the light-coloured bark. Spines 2-5 mm long, at the base of leaves. Flowers conspicuous, light-yellow to cream in colour, in pendunculate glomerules aggregated in panicles, 5-merous, corolla 1.2-2 mm long, at the end of branches or in leaf axils. Pods yellow, green or brown in colour, flat and fairly straight, 10-20 cm long, 5-10 mm wide, containing 10-20 smooth, oblong seeds, dark brown in colour, 6 x 4 mm in size.

Common name: Banyan tree • Hindi: Bargad
Botanical name: *Ficus bengalensis*
Family: *Moraceae* (mulberry family)

Barh or Banyan, a remarkable tree of India and tropical Africa sends down from its branches great numbers of shoots, which take root and become new trunks. A single tree thus may spread over a large area and look like a small forest. This tree is considered to be sacred in some places in India. A specimen in the Calcutta botanical garden is more than 100 years old. It has a main trunk 13 feet (4 m) in diameter, 230 trunks as large as oak trees, and more than 3,000 smaller ones. The largest banyan tree known is on the island of Sri Lanka. It has 350 large trunks and over 3,000 small ones. The banyan often grows to a height of over 21 meters and lives through

After flowering, hard, woody seed pods develop and are often key to identifying the plant species. Typically, these seed heads remain on the tree until released by fire or the plant's death. The Eucalyptus is used in house construction and medium quality furniture items. **Medicinal uses:** Eucalyptus oil has medicinal properties - the well known Vicks Vaporub ointment is made out of eucalyptus oil. Traditionally also, eucalyptus oil is known to be a good medicine for relieving nasal congestion in cold.

Common name: Java plum, Jamun • Hindi: Jamun

Botanical name: *Syzygium cumini*

Family: *Myrtaceae* (Bottlebrush family)

The evergreen Jamun plant is originally from Indonesia and India. Indian mythology describes the Indian subcontinent as an island, 'situated in the centre of the world', called Jambudweep. Because of a majority of Jamun (black berry) trees, this island was named as Jambudweep. An evergreen tropical tree, 50 to 100 ft. tall, with oblong opposite leaves that are smooth, glossy and having a terpenine smell. Jamun has fragrant white flowers in branched clusters at stem tips and purplish-black oval edible berries. The leaves are antibacterial, and are used for strengthening the teeth and gums. The fruit and seeds are sweet, acrid, sour, tonic, and cooling, and are used in diabetics, diarrhoea and ringworm. The bark is astringent, sweet sour, diuretic, digestive and anthelmintic. The jamun can grow in areas where problem of water logging is acute. Its wood is also capable of remaining unaffected in submerged condition for decades and do not rot.

Common name: Black Rosewood, blackwood tree, Indian rosewood rosewood

• Hindi: kala-shisham,

Botanical name: *Dalbergia latifolia*

Family: *Fabaceae* (Pea family)

Synonyms: Amerimnon latifolium

Black Rosewood is predominantly a single-stemmed deciduous tree with a dome shaped crown of lush green foliage. The tree can become 20-40 m tall, with a trunk diameter of 1.5-2 m. The bark is gray, thin with irregular short cracks, peeling in fibrous longitudinal flakes. Alternately arranged leaves are odd-pinnate with 5-7 unequal sized leaflets originating from the same rachis. Leaflets are broadly blunt-tipped, dark green above and pale below. White flowers are borne in panicles, 0.5-1 cm long, in leaf axils. The brown pods are oblong-lancelike, and pointed at both ends. They contain 1-4 smooth brown seeds and do not open at maturity. The species name *latifolia* means broad-leaved. Its wood is excellent material and used for making high quality house hold furniture items.



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stamens. Fruit a flat, oblong pod, twisted at maturity. It's roots are very strong and can break through concrete, ruining sidewalks and driveways and pushing out other vegetation. Used for the cultivation of the lac insect in India. This plant is native to southeast Asia, Indonesia, Papua New Guinea and Australia.

Common name: Peepal, bodhi tree, sacred fig • Hindi, Pipal
Botanical name: *Ficus religiosa*
Family: *Moraceae* (Mulberry family)

Peepal is unrivalled for its antiquity and religious significance. No other tree is claimed to have such long life - one in Sri Lanka, said to have been planted in the year 288 B.C., still lives and flourishes. The Prince Siddhartha is known to have sat in meditation under a Bodhi tree and there found enlightenment from which time he became known as the Buddha. So, from then on the tree was sacred to Buddhists. Hindus associate the tree with the three gods Brahma, Vishnu and Shiva. Vishnu being reputed to have been born under a Peepal, which is therefore Vishnu himself in the form of a tree. A grand peepal tree is a perfect shade tree, and village meetings are often conducted under a peepal tree. It is a large deciduous tree with a pale stem often appearing fluted on account of the numerous roots which have fused with the stem. Leaves are leathery 4-8 inches long by 3-5 inches wide, somewhat egg-shaped or rounded, tailed at the tip and heart-shaped at the base, or sometimes rounded. The young leaves are frequently pink, change to copper and finally to green. Flowers minute within the receptacle. Fruit is a fig. The peepal tree is considered to be power house of oxygen by scientists and worshipped in Hindu traditions. Being huge in size, it is the favourite of birds for shelter and food.

Common name: Eucalyptus, Safeda
Botanical name: *Eucalyptus spp.*
Family: *Myrtaceae* (Myrtle Family)

Eucalyptus is a diverse genus of trees (rarely shrubs), the members of which dominate the tree flora of Australia. All eucalypts are evergreen, although some species have deciduous bark. On warm days vapourised eucalyptus oil rises above the bush to create the characteristic distant blue haze of the Australian landscape. Eucalyptus oil is highly flammable (trees have been known to explode) and bush fires can travel easily through the oil-rich air of the tree crowns. Eucalypts exhibit leaf dimorphism. When young, the leaves are opposite and often roundish and occasionally without petiole. When several years old, the leaves become quite slender and with long petiole. Eucalyptus flowers typically vary from white, cream, pink, yellow, or red depending upon the species. The flower petals and stamens are fused into a cap called an operculum. When the flower opens the cap is shed. The flowers appear as a fuzzy, cream-yellow ball of stamens.



Common name: Indian Butter Tree • Hindi: Mahua
Botanical name: *Madhuca longifolia* var. *latifolia*
Family: *Sapotaceae* (mahua family)
Synonyms: *Bassia latifolia*, *Illipe latifolia*, *Madhuca indica*, *Madhuca latifolia*

Mahua is one of the most important of Indian forest trees, not because it may possess valuable timber - and it is hardly ever cut for this purpose - but because of its delicious and nutritive flowers. It is a tree of abundant growth and, to the people of Central India, it provides their most important article of food as the flowers can be stored almost indefinitely. It is large and deciduous with a thick, grey bark, vertically cracked and wrinkled. Most of the leaves fall from February to April, and during that time the musky-scented flowers appear. The plum-coloured calyx is also furry and divides into four or five lobes; within them lies the globular corolla, thick, juicy and creamy white. Through small eyelet holes at the top, the yellow anthers can be seen. The stamens are very short and adhere to the inner surface of the corolla; the pistil is a long, protruding green tongue. It is at night that the tree blooms and at dawn each short-lived flower falls to the ground. A couple of months after the flowering period the fruit opens. They are fleshy, green berries, quite large and containing from one to four shiny, brown seeds.

Medicinal uses: Medicinally the tree is very valuable. The bark is used to cure leprosy and to heal wounds, the flowers are prepared to relieve coughs, biliousness and heart-trouble while the fruit is given in cases of consumption and blood diseases.

Common name: Ceylon oak, Lac tree, Gum lac tree • Hindi: Kusum
Botanical name: *Schleichera oleosa*
Family: *Sapindaceae* (soapberry family)

Kusum is a beautiful tree with a broad, shady crown, found widespread in Tropical Himalayas (Punjab to Nepal), India, Ceylon, Burma, Thailand, Indo-China, Malaysia. This tree is mostly noticed because of its bright red leaves when they are new. In India this happens around March. The leaves are pinnate, with each leaf having 2-4 leaflets. Flowers are tiny, occurring in short dense yellow clusters. The flowers are hardly noticeable. The fruit is about the size of a small plum.

Common name: Cluster fig • Hindi: Goolar
Botanical name: *Ficus racemosa*
Family: *Moraceae* (Mulberry family)
Synonyms: *Ficus glomerata*, *Ficus lucescens*, *Ficus racemosa* var. *elongata*

Goolar is an attractive fig tree with a crooked trunk and a spreading crown. Unlike the banyan, it has no aerial roots. The most distinctive aspect of this tree is the red, furry figs in short clusters, which grow directly out of the trunk of the tree. Those looking for the flower of goolar should



Common name: Kadam • Hindi: Kadamba
Botanical name: *Neolamarckia cadamba*
Family: *Rubiaceae* (Coffee family)
Synonyms: *Anthocephalus cadamba*, *Anthocephalus indicus*

In Hindu mythology, Kadam was the favourite tree of Krishna. Tree up to 45 m tall, without branches for more than 25 m. Diameter up to 100 (-160) cm but normally less; sometimes with buttresses. The crown is umbrella shaped and the branches are characteristically arranged in tiers. Leaves are simple, 13-32 cm long. Flowers are orange, small, in dense, globose heads. They appear like solid, hairy orange balls. The fruits are small capsules, packed closely together to form a fleshy, yellow or orange coloured infructescence containing approx. 8,000 seeds. The small capsules split into four parts releasing the seed at maturity. There are approximately 20,000 seeds per gram. It is believed to have medicinal value as astringent, in curing ulcer, digestive disorders, diarrhoea, expectorant, fever and vomiting. A postal stamp was also issued by the Indian Postal Department to commemorate this tree.

Common name: Bel, Bengal quince, Stone apple, Wood apple • Hindi: Bel
Botanical name: *Aegle marmelos*
Family: *Rutaceae* (Citrus family)
Synonyms: *Crateva marmelos*, *Aegle marmelos* var. *mahurensis*

Bel is a fruit-bearing tree which is cultivated throughout India, as well as in Sri Lanka, northern Malaya, Java and in the Philippines. The tree, which is the only species in the genus *Aegle*, grows up to 15 meters tall and bears thorns and fragrant flowers. Leaves are alternate, pale green, trifoliate; terminal leaflet, 5.7 cm long, 2.8 cm broad, having a long petiole; the two lateral leaflets, almost sessile, 4.1 cm long, 2.2 cm wide, ovate to lanceolate having reticulate pinnate venation; petiole, 3.2 cm long. Flowers, greenish white, sweetly scented, bisexual, stalked, 8 mm long; diameter of a fully open flower is 3 cm; flowers, borne in lateral panicles of about 10 flowers, arising from the leaf axils. It has a woody-skinned, smooth fruit 5-15 cm in diameter. The skin of some forms of the fruit is so hard it must be cracked open with a hammer. It contains numerous seeds, which are densely covered with fibrous hairs and are embedded in a thick, gluey, aromatic pulp. The fruit is eaten fresh or dried. The juice is strained and sweetened to make a drink similar to lemonade, and is also used in making Sharbat. It is a sacred tree, dedicated to Lord Shiva. The offering of bael leaves is a compulsory ritual of the worship of Lord Shiva in the hills. This importance seems largely due to its medicinal properties. All parts of this tree, root, leaf, trunk, fruit and seed, are used for curing one human ailment or another.



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Common name: Indian jujube, Indian plum • Hindi: Ber

Botanical name: *Ziziphus mauritiana*

Family: *Rhamnaceae* (Ber family)

Ber is a small or medium sized subtropical tree, popular for its small berry like fruit. It grows wild in forests and also on wastelands throughout the mid-hills up to elevations of 1,400 metres. The small fruits are liked by children as well as by adults. A small spreading tree, with drooping branches; height, 5 to 8 metres; trunk girth, 85 cm; bark, rough, gray or dull black, irregularly cracked, covered with a thick layer of green moss in the case of older trees and, thus, looking green. Leaves, ovate, petiolate (petiole, 5 mm long), having very fine serration, 3.8 cm long, 2.9 cm broad, dark green and shining from above, white tomentose from beneath. The flowers are yellowish and born in clusters along the leaf axils and this is shortly followed by the rounded fruit which can be anywhere from three-quarters of an inch to an inch-and-a-half in size. Trees are easily propagated by seeds, however, seedlings take two to three years to start fruit production.

1.2.A.2 GENERAL DESCRIPTION OF THE GROWING STOCK

Forest Types:

According to revised classification of forest types of India by Sir H. G. Champion and Shri S. K. Seth, forests of Ramgarh Division fall into the following types.

- I. Northern dry Sal bearing forests - 5 B/C - 1 type
- II. Northern dry mixed deciduous forests – 5B/C- 2 type

Larger chunk of the forests of the Division is composed of the former type. Khair is generally scattered on the lower slopes of hilly tracts & eroded lands of both sal & miscellaneous forest. The quality is in generally poor, especially those of in the land of bereft of top soil. Heavily grazed open lands are ideal for the establishment of this species. However the khair is not preferred in financial terms, as it has been subjected to heavy illicit felling in the past.

Bamboo in the Division is surprisingly quite inconspicuous and is found mainly scattered around the fringe of the forests.

Composition and condition of the crop

A. Sal forest:

This corresponds to the Northern Dry Sal bearing forests 5B/C1 type. The dominant species in this forest type is sal along with associates. Composition of forests in the top and middle stories are *Shorea robusta*, *Terminalia tomentosa*, *Madhuca indica*, *Phyllanthus marsupium*, *Adina cordifolia*, *Diospyros melanozylon*, *Terminalia chebula*, *Buchanania lanzan*.



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know that the fig is actually a compartment carrying hundreds of flowers. One might wonder how these flowers enclosed in a ball are pollinated. The flowers are pollinated by very small wasps that crawl through the opening in search of a suitable place to reproduce (lay eggs). Without this pollinator service fig trees cannot reproduce by seed. In turn, the flowers provide a safe haven and nourishment for the next generation of wasps. Goolar is a tree commonly found in cities and towns. It has evergreen leaves, if it is close to a water source. Otherwise it sheds leaves in January. The fig tree is very important from wild life point of view and its fruits are favorites of birds. It is home to a variety of birds, rodents, lizards and insects.

Common name: Gamhar • Hindi: Gamhar

Botanical name: *Gmelina arborea*

Family: *Verbenaceae* (Verbena family)

Gamhar is a beautiful fast growing deciduous tree occurring naturally throughout greater part of India up to 1500 m. It is a fast growing tree, which though grows on different localities and prefers moist fertile valleys with 750-4500 mm rainfall. It does not thrive on ill drained soils and remains stunted on dry, sandy or poor soils; drought also reduces it to a shrubby form. The tree attains moderate to large height up to 30 m with girth of 1.2 to 4.5 m with a clear bole of 9-15 m. It is a treat to see the gamhar tree standing straight with clear bole having branches on top and thick foliage forming a conical crown on the top of the tall stem. Bark light grey coloured exfoliating in light coloured patches when old, blaze thick, a chlorophyll layer just under the outer bark, pale yellow white inside. Flowering takes place during February to April when the tree is more or less leafless whereas fruiting starts from May onwards up to June. Flowers occur in narrow branching clusters at the end of branches. The yellow flower, tinged with brown, is trumpet shaped, 3-4 cm long. The trumpets flare open into a gaping mouth with 5 distinct lobes.

Medicinal uses: The root and bark of *Gmelina arborea* are stomachic, galactagogue laxative and anthelmintic; improve appetite, useful in hallucination, piles, abdominal pains, burning sensations, fevers, 'tridosha' and urinary discharge. Leaf paste is applied to relieve headache and juice is used as wash for ulcers. Flowers are sweet, cooling, bitter, acrid and astringent. They are useful in leprosy and blood diseases. In Ayurveda it has been observed that Gamhar fruit is astringent, sour, bitter, sweet, cooling, diuretic tonic, aphrodisiac, alternative astringent to the bowels, promote growth of hairs, useful in 'vata', thirst, anaemia, leprosy, ulcers and vaginal discharge. The plant is recommended in combination with other drugs for the treatment of snake bite and scorpion-sting. In snake-bite a decoction of the root and bark is given internally.



binata, *Comboretum decandrum*, *Bahunea vahlii* etc. The tree species are not able to grow to sapling or young pole stage due to reckless hacking. Karam, sidha, asan, rori (*Malotus philippinensis*) are quite common. Scattered bamboo clumps are also found especially on the slopes facing Ramgarh cantonment area. Such forests were worked under coppice with standard system, but the regenerated crop has not been able to establish due to excessive biotic interference. Scattered Semal trees are found in moister localities while scattered Salai are found on ridges and drier localities. Sal occurs near the foot-hill and in well drained moist localities. Doka or Jhingan is a common species in such localities.

C. Khair

Khair trees, as usual, are found scattered patches. Khair is generally found on lower slopes and eroded areas. These were subjected to reckless hacking and uprooting by kattha smugglers in the past. The quality is generally poor especially in the eroded localities.

D. Bamboo

Occurrence of bamboo in this division is not extensive and occurs mainly on the hill slopes of Ranchi plateau and Mandu Range in the areas adjoining Barkagaon forest range of Hazaribagh West Forest Division. The quality is generally poor.

E. Plantations and Blanks

Blanks of the Division have been planted and restocked in the past along with general rising of plantations over considerable area over last few years. The pace of plantation activities got a tremendous boost after creation of Jharkhand state in the year 2000 and vast chunk of blanks in the forest areas were taken up for plantation under State plan, other centrally sponsored schemes and with the financial assistance provided by Govt. of India under national afforestation programme through Forest Development Agencies. Beside Ramgarh Forest Division, plantation was also taken up by Hazaribagh afforestation division and Hazaribagh social forestry Division.

General outcome of the plantations of the Division is not encouraging and the reason behind is the same ubiquitous factor of excessive biotic interference and illicit removal of young crops for routine agriculture needs, house construction, fire wood fencing and other house hold requirements. Thus severe biotic pressure have played negative role in both the artificially regenerated plantations or coppice regenerations and resulted into the occurrence of widespread blanks and semi-blanks all over the Division. In many plantation areas the rehabilitated crops of coppice origin out number the artificially planted trees because of protection.

Vast areas of shrubby forests possess rooted sal wastes and of miscellaneous species in the blanks. A ten year annual plantation schedule has been proposed under rehabilitation cum-soil conservation and plantation working circle.



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Semioarpus unicoloratum. Occasional bamboo brakes are also present. The shrubs consist of *Holoptium antidysenterica*, *Nyctanthes arbortrites*, *Randia demetorum*, *Caesaria* sps. *Indigofera pulchella*, *Carissacarpa*, *Vitex negundo*, *Croton oblongifolia*, *Zizyphus* species and Phoenix. The grasses consist of *Heteropogon contortus*, *Eulaliopsis binata*. The climbers are *Bauhinia vahlii*, *Asparagus racemosus*, *Acacia pinnata*, *Butea superba*, *Millettia couriculata*, similar species and a few species of *asclepiadaceae*.

The crop of almost entire area is of coppice origin. The general quality of sal forests is coppice quality-B but localized patches having crop of quality-A are also found at few places. The purity of sal varies widely depending upon various locality factors.

The best sal forests were found on the coarse-sandstone of the Division in the past which belong to the Upper Gondwana system. Extensive patches of almost pure sal forest of are found on the hills. Natural regeneration in whippy seedling stage is generally adequate in this type of crop.

Quite an extensive area having sal forest has undergone degradation due to extreme biotic interference, i. e. irregular felling by villagers, fire and grazing. Such sal forests generally contain young sapling crop of almost pure sal. The site quality is generally good to support excellent pole crop but due to excessive-repeated irregular felling for fuel wood and ghoran the crop never grows beyond pole/ sapling stage. In certain areas the biotic interference is so much that the crop never grows beyond whippy seedling stage. Areas with such a crop are popularly known as sal rooted waste.

B. Miscellaneous forests:

This is classified as northern dry mixed deciduous forest 5B/C2. The trees in the top story are *Boswellia serrata*, *Anogeissus latifolia*, *Lagerstoemia parviflora*, *Diospyros tomentosa*, *Pterocarpus marsupium*, *Adina cordifolia*, *Mitragyna parviflora*, *Buchnanian lanzan*, *Stereua urens*, *Cochlospermum religiosum*, *Madhuca indica*, *Embllica officinales*, *Aegle marmelos* and *Lagerstroemia parviflora*.

The middle storey consists of frequent and extensive bamboo brakes of *Dendrocalamus strictus* where condition of soil is better. The shrubs consist of *Woodfordia fruticosa*, *Nyctanthes arbortrites*, *Zizyphus* species.

The miscellaneous forests are situated on the warmer aspects and comparatively drier localities like hill slopes and hill tops having poor soil and moisture condition. The crop is generally open. Other associates are doka, dhaura, sidha, kend, galgal, piar, amia etc. The shrubs consist of *woodfordia fruticosa*, *harsingar* is very scarce.

The outer slopes of Ranchi plateau facing the Damodar basin falling within this Division contain very little except mesh of climbers and miscellaneous shrubs. The climbers are *Asparagus*



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The quantum of forest produce removed far exceeds the annual volume increment put on by forest. This results in gradual depletion, shrinkage of the forest cover and wide spread degradation.

2. FIRE:

Fire is a great menace throughout these forests and causes greatest damage. This is caused by the local villagers due to careless handling of fire during burning the floor underneath mahua trees at the time of collection of Mahua flowers during summer months. Sometimes fire is also caused intentionally during tribal hunt to chase away wild animals to bring them under trap. Fire is also caused due to sheer carelessness of the passers by who throw lighted matchsticks and biri stub without extinguishing them. Many times village people put forest areas to fire for clearing the thorny bushes or with the objective that a new flush of grasses will come out for cattle grazing on advent of monsoon season.

The injuries caused by fire are both direct and indirect. These are summarized below:-

1. Seedlings and young saplings are burnt out right. Young poles are badly scorched their new flush of leaves are burnt. This causes the loss of the year's growth and also reduces their vitality resulting in subsequent unsoundness of trees.
2. The humus and the leaf litter are burnt completely thereby causing a major deficiency of soil nutrient.
3. The ground surface is baked and hardened to make it impenetrable for the tender roots of seedlings to establish.
4. The ground flora is completely burnt. Due to this soil run off in the first few showers is very high.
5. The baking of the soil reduces the porosity of soil which further adds to the run off and accelerates the pace of soil erosion.
6. The micro-organism which is so much beneficial to the soil is killed outright.
7. The nesting and breeding places of birds and other wild animals get burnt leading to their dwindling population in their natural habitats.

3. GRAZING:

Grazing is another factor which causes appreciable harm to the forest crop in early stages of regeneration. Though the prescriptions of the working plan forbid grazing for at least 5 years after coppice felling this prescription is rarely followed. In the state of Jharkhand including Ramgarh division, people are in habit of keeping a large herds of cattle many of them are unproductive and there is no tradition of stall feeding and they are let loose to graze freely in the



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1.2.A.3 STATUS OF NATURAL REGENERATION

During enumeration work while sample plots were being laid out, regeneration survey was also carried out simultaneously by marking smaller plots among the sample plots to assess the regeneration status of the forest. Since the forest vegetation of the Division consists of predominantly sal and its natural associates, the counting of saplings/ recruits was recorded only under two categories i.e. Sal (*Shorea robusta*) and Miscellaneous. The village wise details of regeneration survey have been compiled as **Appendix – III A and Appendices III B in 2nd volume of the Working Plan Proposals.**

From the sample survey it is evident that sal is predominant species in most of the forest areas and there is no dearth of regeneration but successful establishment of the same is not up to satisfactory level in the entire Forest Division barring few localities where people are aware and concerned about the environmental issues and JFM committees are active. The prime causes of this state of affairs are heavy biotic pressure like grazing and incidence of recurring annual forest fire. If the existing young seedlings and young recruits are allowed to grow unhindered, the crop will attain normal composition in course of time even with existing pace and condition of regeneration in most of the localities. In degraded and highly degraded forest areas, rehabilitation measures including artificial regeneration will be required. It was also observed during field visits that Sal and its associate species like Asan, Sidha, Mahua, and Piar regenerate profusely during monsoon season but their establishment is adversely affected during summer months owing to recurrent forest fires and excessive biotic interferences. The ground fire play havoc with the process every year as hardly any forest is spared from its incidence. The issue has been discussed in detail under sub-head **Regeneration Survey of the chapter VIII "Statistics of Growth & Yield"**

1.2.A.4 INJURIES TO WHICH THE CROP IS LIABLE:

The forests suffer more due to injuries caused by biotic factors than the natural causes. Some of them are listed below.

1. UNREGULATED FELLING:

This is, perhaps, the most significant cause for the deterioration of the forest. Irregular felling is done on large scale outside the demarcated annual coupes by the villagers in the guise of collection of dry fuel wood and for ghoran. Irregular and unregulated fellings upsets the calculation and general assessment made during the preparation of working plan. Many of the forests situated near habitations suffer due to this malady and awakening of people and the concept of forest management are the only hope if our future generation wish to reap the benefits of this natural bounty and lead a normal healthy life in years to come.



forest areas by the villagers during monsoon season to keep them away from damaging the agricultural crops.

The young coppice shoots are badly browsed and damaged due to grazing. In older crop the recruitment and establishment of seedlings is handicapped due to grazing and trampling of the seedlings. Due to excessive incidence of grazing in the forests near villages the ground is also rendered compact for the newly germinated seedlings to strike root. The young shoots of bamboo are eaten away by domestic cattle and wild animals alike. This is one of the main reasons why the floor of forest near villages is devoid of any under growth.

4. DROUGHT:

It is one of the important natural factors which cause injuries to the forest. The tract faces periodical drought which is caused due to appreciably lower rainfall than the annual average and low spell of drought before the onset of summer. The plantations suffer most due to drought. Among the present set of species which are being planted on large scale *Acacia auriculaeformis* is the most drought tender species. Even due to a short spell of dry hot weather the growing tip of this species dries up. During a bad drought year sometimes the whole plant dries up completely in extensive patches especially in areas on the windward side of the drier hill slopes.

The natural species also get adversely affected due to prolonged drought condition. The sal is fairly susceptible to drought. It puts on new flush of leaves early. The tender leaves and the shoots get scorched due to hot desiccating wind if the available moisture in the soil decreases beyond critical level.

The year 1980 proved to be a bad drought year for Sal forests. Top drying of sal occurred on large scale in many localities especially in the recently coppiced coupes where the standards got scorched due to exposure to hot desiccating wind. Due to bad drought condition some drought resistant species delayed leafing. This phenomenon was noticed during 1980 on many mahua trees on which new flush of bronze colored leaves were appearing even after the onset of monsoon. The year 2004-05 was also bad drought year for the forest when pole crops were seen drying during summer months and plantation crops were widely damaged.

5. FROST:

As we know that Sal is highly frost sensitive species but it is not a serious cause for damage on large scale. However, there are a few localized frost holes on the plateau in the valley bottom along nalas. Cold wave generally runs through the tract every year. During the cold wave the vegetation in the frost affected areas get damaged. The saplings and the young poles which are not protected by any over wood get frost bite. Their tender growing shoots get killed.



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8. CLIMBERS

Damage due to climbers is not very serious problem. The incidence of climbers is generally low except in comparatively moister valleys. The main species are *Bauhinia vahlii*, *Butea superba*, *Acacia pinnata*, *Millettia auriculata*, *Comretum decandrum*, *Celastrus paniculata* and *Vamilatia maderaspatana*.

9. PARASITE SHRUBS

The banda which is the common local name for all species of branch parasites also does some damage to trees. The two common species are *Loranthus longiflorus* and *Loranthus arundinis* of which the former is more common. It is found in epidemic form in certain localities where almost all the trees are infested. It lives upon the vitality of the plant due to which the growth is arrested. The other species of banda is *Viscum orientate*.

10. WIND

High velocity storm associated with rains is common feature during pre-monsoon period and summer months. Such storms and high velocity winds, sometimes causes damage to planted species in which many trees are uprooted completely. The damage in the natural forest having close canopy is negligible.

11. FUNGUS:

This causes a lot of injury to the standing crop of Sal. It causes heart rot in the standing trees. The infection is so wide-spread that almost all trees in some of the localities are affected. The crop in poorer localities where forest fire is an annual feature is more susceptible to this disease. The longer an infected tree is allowed to grow the more its heartwood is damaged. The infected tree loses its value drastically. If the infection has advance, the tree loses its entire timber value and yields nothing better than firewood of inferior quality. The worst part of this disease is that the heart rot continue to grow even after the tree is felled and logged.

12. INSECTS:

Insect damage to natural forest crop is the significant. However, the young seedlings in the nursery and in the plantation areas are quite susceptible to insect damage. The leaf eating insects, a variety of caterpillars eat away leaves of seedling of leguminous species if left uncared. In the plantation areas the freshly planted seedlings are damaged by termite, soil grub and leaf eating caterpillars. Older trees in the plantations are also sometimes affected by leaf eating insects. The Chakundi and the Teak are two common species which are generally damaged the most.



CHAPTER - II B

1.2B.1 FOREST FAUNA

The status of wild life in past has been described in fair details in the **District Gazetteer of Hazaribagh by E.Lister, C.I.E. published in the year 1917**. Though the description related to the entire district of old Hazaribagh which has now given rise to districts of Koderma, Chatra, Giridih and Ramgarh, it holds good in general to the tract of most parts of the North Chhotanagpur revenue division of Jharkhand. The present Ramgarh Forest Division being part of it share the wild life legacy of the past though the variety and number of wild animals found here have dwindled significantly and is now part of the history. The description in this chapter makes an interesting reading and reproduced below for reference.

“There has been no zoological survey of this district and very little has been recorded with special reference to Hazaribagh. It is, however, probable that the wild animals found there are practically the same as those in the rest of Chhotanagpur. There is no reason to believe that tigers are especially numerous in number, in spite of the large number of victims reportedly claiming to be attacked by them in the district. In a year not more than five or six tiger skins are brought to the Courts for the customary reward of Rs.25 and the number killed by European sportsmen is quite small. It is probable that owing to accidental circumstances tigers take to man killing more freely in this district than elsewhere, and some have been credited with an extraordinary number of victims. They still haunt the Koderma forests, and are permanent residents of the hills near Danto, North of headquarters stations. In Khesmi and Doranda, Satgawan and Partap pur there appear to be families ordinarily in residence. The great difficulty in meeting with them is the enormous extent of continuous cover over which they may wander free from observation, and the absence of favorite resorts. It is not safe after a kill in any particular place to assume that the animal will be anywhere in the same locality immediately afterwards. Leopards are much more common, and frequently visit the town of Hazaribagh. Each year they kill large numbers of cattle, but they rarely attack human beings unless provoked. Bears are not numerous except in the south and east, when skins are often brought in; they belong to the ordinary sloth variety. Hyenas are fairly numerous in the neighborhood of the head quarters station, where they are attracted by the bodies of the dead cattle at the join Pinjrapole near Seotagaraha hill. Wolves, for about four years from 1910 to 1914, killed a large number of human beings near Chauparan, but a special reward of Rs. 50 led to the hunting of them and this evil has now ceased. They are found over the whole of the district and take considerable toll of goats. Jackals and foxes are common as there is abundant food over greater part of the district in the form of feathered game and wild fruits. Pigs are numerous in the west and south, and the great damage which they cause to the crops is usually put forward as the reason for a large number of applications for gun licenses received



from that part of the district Hares are common, except in tracts occupied by the Santhals, whose methods of hunting quickly exterminate all game. Dears and sambar are still found, especially in Gawan and Partappur. Spotted deer, hog-deer, four horned deer and ravine deer are met with, but are not plentiful. Nilgai are found in Partappur.

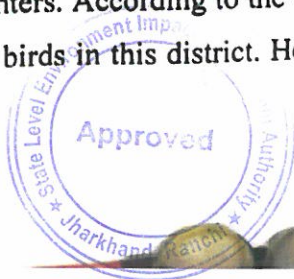
The larger number of the deaths caused by tigers in 1915 was due to a single animal near Katkam sandi for whom a special reward has been offered. The great increase in the rewards distributed was due to the special rate of Rs. 50 paid for wolves until the end of March 1915.

Precise information about the birds of this district is almost completely wanting, and the following paragraph is necessarily restricted to a mere impression of its sporting resources. Pea Fowls are fairly numerous in suitable localities and jungle fowl are wide spread. The Grey Partridge is common all over the district, but the black species is confined to the more wooded parts, as also is the much less numerous spur-fowl. Field Quail may be found in spring in the rice crops of the west, and Bush Quail are common. Snipe, though not present in large numbers, are wide spread in the cold weather. Green Pigeons are common, and golden plover are some times found. A small species of Sand Grouse is occasionally met with in the north. Geese and duck are comparatively very rare as the rivers are too small to be safe resorts, and there are few artificial sheets of water of any size.

This same want of large permanent bodies of water necessarily results in the absence of fisheries of serious value. Most of the larger tanks contain fish, which are however liable to total destruction in the not unusual event of complete de-watering. Regarding reptiles it is at present safe to say little more than the fact that the reported human deaths from snake bite were 92 in 1901, 125 in 1911 and in the four following years an average of 120 per annum.

From the above description it is evident that tigers, leopards and wolves were fairly abundant in the whole district. The Danto forest, which at present form a part of the Hazaribagh Park was permanent residence of the tiger. Leopards were more common and they used to visit Hazaribagh town frequently. The wolves which are at present a rare animal were perhaps quite numerous killing large numbers of human beings. They were virtually exterminated by a special drive in which a special reward of Rs. 50 was given.

The later Gazetteer of the district by P. C. Roy Choudhary published in 1957 states that deforestation has definitely affected the fauna population. Indiscriminate shooting particularly in the years when military personnel were stationed in the district and its neighborhood in connection with the Second World War is another contributory cause. The Santhals are also indiscriminate hunters. According to the Gazetteer of Mr. Roy Choudhary there were 25 resident and 61 migratory birds in this district. He has also not given an account of larger animals of the district.



During the transition period, the fauna was heavily exploited along with the ruthless destruction of the forest cover. Practically little seed stock of the wild ungulates, the carnivores and other animals was left. There is a record of shooting of one white tiger in this area by one mica merchants of Koderma (Maonodih). The landlords used to trap tigers and leopards and sell them to circus and zoo with the help of a device known as "tiger trap" which still exists inside the park area as a memento"

The present status if wildlife in Ramgarh Division is not encouraging though the Ramgarh reserve forest was rich reserve of wild life under princely estate of Ramgarh Raj.

The occurrence of wild animals is rather rare in this area at present. The commonest animal is the wild boar which is evident from the hue and cry raised by the villagers against damage caused to their agricultural crops by this animal. The other animals which are reported though in smaller number are the barking deer (rare) hyena, leopard, hare, wolf, jackal, sloth bear, and common langur. The results of census carried out in the Division during may-June, 2006 is not known in the Division as the formats on which entries were made and sent to wild life Institute of India for analysis and intimation of results, have not yet been received back. As per intimation received from DFO Ramgarh, counting of wild elephants was made in the year, 2007 and a total of six elephants were found to be permanent residents of Gola Range. Out of this total number, male, female and calf were recorded as two each. Every year few estranged herds from Sarguja district of Chhattisgarh, west Bengal and neighboring districts of Jharkhand also join them and create problems for the people causing damage to life, cattle, houses and crops. It is necessary to settle claims arising out of damage caused by elephants promptly to avoid ugly incidents in future and settle this issue in consultation with wild life experts to avoid annual man-elephant conflicts. The Govt. of Jharkhand has made provisions of making payment of compensation for the loss of life and property. An amount of Rs. 1.00 lakh is paid in case of death of an adult person while Rs. 0.33 lakh is paid for injured. For other damages like houses or crops monetary compensation based on the spot verification is also paid to the affected families. These measures are important step in the direction of wild life conservation and to avoid human wild life conflict but certain other efforts to generate awareness and educate the people about the importance of wild life and their fascinating world in complex ecosystem through screening of films and concept of ecotourism need to be made. The need of the hour is to create separate wild life wing in each forest Division including Ramgarh rather than creating separate Wild Life Division in the state as both are inseparable from each other.



A list of commonly found wild animals in detail has been given in the beginning under
"List of Common Animals and Birds"

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An illustrative account of few wild animals found in the Division is as follows.

Elephant

The Asian elephant is one of the largest land mammals on Earth. Herds of elephants frequent the divisional territories every year in course of migration from West Bengal and



Chhatisgarh forests. A small herd of elephants has now made their permanent home in the forests of Gola Range.

Physical Traits

Asian elephants of the Indian subcontinent grow to a height of between 8 ft and 10 ft, slightly smaller than the African elephant, they weigh as much as 7,000 to

11,000 pounds. The feet of an Asian elephant are very large and broad, which enables it to balance its enormous weight quite easily. There are thick soles below the feet, which absorb shock and cushion legs, when the elephant walks and runs. Their length varies between 216 inches and 252 inches.

The huge and beautiful tusks of the Indian elephant only serve as the icing on the cake. These tusks are actually incisor teeth made up of ivory, which may grow up to 5 ft in length. The tusks are used by the elephants in digging for food, clearing debris, and carrying logs. The only other animal that has ivory tusks is the walrus.

The trunk of the Asian elephant has two finger-like structures at its tip that allow the animal to perform both delicate and powerful movements. Elephants have long, coarse hairs sparsely covering their body. Their skin is brown to dark gray. They have been very important to Asian culture for thousands of years - they have been domesticated and are used for transportation and to move heavy objects.

Nothing can compare the majestic build up of an elephant and when you ride on when it feels like you've gone back to the times of the royal. Elephants always catch the attention of every onlooker, but just like Tigers and Lions, this animal has also come under threat of extinction.

Elephants live in a matriarchal family group of related females called a herd. They are led by the oldest and often largest female in the herd. Herds consist of eight to 100 individuals. Males may be associated with a herd, solitary or may live temporarily with other males. Elephants produce a variety of sounds including low frequency calls, high pitched calls and loud trumpeting.

Asian elephants eat grass, bark, roots and leaves. They also like crops such as banana grown by farmers, making them a pest in agricultural areas. Adult elephants eat about 330



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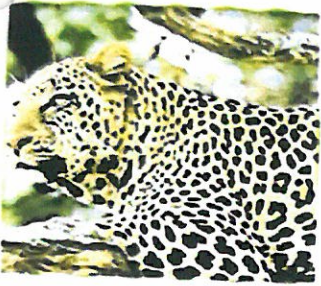
pounds of food a day. They must drink water every day and are never far from a water source.

They live in a range of habitats from grasslands to wet forests. Asian Elephants have a varied vegetarian diet, and feed on grasses, bamboo, leaves, bark, shoots, creepers and palms. They also prefer seasonal variety sometimes such as fig leaves and fruits, wood apple and mango.

Indian Elephants are very sociable animals and March from forest to forest, seldom staying in one for more than a few days. However, few males in their youth prefer to lead a solitary life. When on the move, the females lead the herd, with the tuskers lagging behind, unless alerted to some approaching danger.

LEOPARD

These cats have an elongate and muscular body. Their paws are broad and their ears are short. In tropical regions their coats tend to be shorter and sleeker. The coloration varies from the color of straw to grayish to even chestnut. The backs of the ears are black except for a spot either located centrally or near the tips. These appear to other animals as eyes. The throat, chest, belly, and the insides of the limbs are white. The rest of the head, throat, chest, and limbs all have small black spots. The belly has larger black spots, almost like blotches.



This characteristic is more frequent in densely forested areas where being darker is probably beneficial in remaining unseen as compared to open areas. Whether spotted or black, leopards' coloration is extremely effective. Scientists have been unable to spot these cats just a few yards away even knowing that they were present. Leopards have been recorded as long as 2.92 meters but that is extreme, 1.37-1.67 is more common.

Leopards are famous for their ability to go undetected. They may live practically among humans and still be tough to spot. They are graceful and stealthy. Amongst the big cats they are probably the most accomplished stalkers. They are good, agile climbers and can descend from a tree headfirst. Along with climbing, they are strong swimmers but not as fond of water as tigers; for example, leopards will not lay in water. They are mainly nocturnal but can be seen at any time of day and will even hunt during daytime on overcast days.

In regions where they are hunted, nocturnal behavior is more common. These cats are solitary, avoiding one another. However, 3 or 4 are sometimes seen together. When making a threat, leopards stretch their backs, depress their rib cages between their shoulder blades so they



stand up and lower their heads (similar to domestic cats) During the day they may lie in bush or under a tree with their tails hanging below the treetops and giving them away.

The diet of these big cats is surprisingly varied. Prey for this species includes: impalas, reed-bucks, Thomson's gazelles, jackals, baboons, and storks. These are the most common food sources with Thomson's gazelles and reed-bucks making up the majority. However, other prey are included in leopards' diet. At times they seem to show a preference for primates, in fact attempting in the past to snatch dogs right from the feet of their masters. With destruction of their habitats, they venture out of forest areas to kill domestic cattle.

Man-eating

While most leopards avoid people, humans may occasionally be targeted as prey. Most healthy leopards prefer wild prey to humans, but injured, sickly or struggling cats with a shortage of regular prey may resort to hunting humans and become habituated to.

Striped Hyena

Striped hyena belongs to the Hyaenidae family and is scientifically known as Hyaena hyaena. Strongly related to the Brown hyena, it is basically a solitary creature. The average lifespan of striped hyenas hovers somewhere around 10 to 12 years in the wild. When kept in captivity, they can live longer also.

Physical Traits

The body coat of a striped hyena is covered with grayish-brown fur. Its legs, torso, head and back have black vertical stripes all over, while, muzzle and ears are totally black. There is also a medium sized mane on its neck, shoulders as well as the back. When threatened, a striped hyena erects the hair on its mane, making it look 30-40 percent bigger than it actually is. The legs are quite long and the tail is feathery, reaching the hocks. Striped hyena of India may grow to a length of 4 to 5 feet. It stands tall at a shoulder height of 2.2 to 2.5 feet. Striped hyenas weigh between 57 and 90 pounds (26 and 41 kg). The size of a male and a female striped hyena does not differ too much. Quite similar to a number of other climate animals, their ears also radiate heat.



Natural Habitat

Striped hyenas are found occupying the tropical savanna, grasslands, semi-deserts, scrub forests and woodlands. In the Indian subcontinent, they inhabit open country, seashores as well as forests. In Ramgarh forests, they are spotted near their dens mostly located on steep slopes.

Diet

Striped Hyenas are mainly carnivores, but may eat fruit also. Their prey includes...



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small animals like mice, mammalian carrion, tortoise, porcupine and wild pigs. They may also hunt domestic animals, like goats, sheep, donkeys, and horses.

Behavior

Striped hyenas are nomads by nature and move from one water hole to another. Still, they never venture more than 6 miles from their previous water hole. Hyenas are not gregarious creatures and live mostly in isolation. At times, one can find them congregating in small family groups. Striped hyenas of India can be frequently seen seizing and shaking each other by the neck in mock fighting rituals.

Female striped hyenas attain maturity when they reach 2-3 years of age. Their estrous cycle lasts for 45 to 50 days and they can mate throughout the year. The usual number of cubs is two and they start eating meat after 30 days.

Relationship with other predators

Striped hyenas of India are basically scavengers, which thrive on the kills of other predators. This habit of theirs results in a confrontation with the other predators. In India and the Middle East, the striped hyenas may, at times, enter into a conflict with the wolves also. Striped hyenas may be able to dominate very young leopards and tigers also.

Status

Striped hyenas are included in the list of 'Near Threatened' species. The exact population of the striped hyenas of India is not known.

Indian Peacock

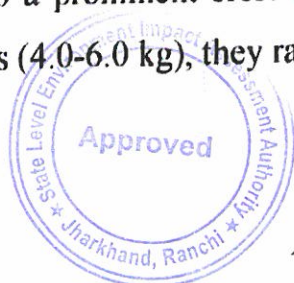
The male Indian Peafowl, commonly known as the peacock, is one of the most recognizable birds in the world. These large, brightly colored birds have a distinctive crest and an unmistakable ornamental



train. The train (1.4-1.6 meters in length) accounts for more than 60% of their total body length (2.3 meters). Combined with a large wingspan (1.4-1.6 meters), this train makes the male peafowl one of the largest flying birds in the world. The train is formed by 100-150 highly specialized upper tail-coverts. Each of these feathers sports an ornamental ocellus, or eye-spot, and has long disintegrated barbs, giving the feathers a loose, fluffy appearance. When displaying to a female, the

peacock erects this train into a spectacular fan, displaying the ocelli to their best advantage.

The more subtly colored female Peafowl is mostly brown above with a white belly. Her ornamentation is limited to a prominent crest and green neck feathers. Though females weigh nearly as much as the males (4.0-6.0 kg), they rarely exceed 1.0 meter in total body length.



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The Indian peacock *Pavo cristatus* (Linnaeus), the national bird of India, is a colorful, swan-sized bird with a fan-shaped crest of feathers, a white patch under the eye and a long, slender neck. The peacock is widely found in the Indian sub-continent. The peacock enjoys immense protection. It is fully protected under the Indian Wildlife Protection Act, 1972.

Diet

Indian Peafowl do most of their foraging in the early morning and shortly before sunset. They retreat to the shade and security of the forest for the hottest portion of the day. Foods include grains, insects, small reptiles, small mammals, berries, drupes, wild figs, and some cultivated crops. This long and close association with humans has proven the peafowl's adaptability to human-altered landscapes. This species does not appear to need any additional legal protection or conservation attention.

COBRA

The Indian Cobra is known around the world as highly venomous snake that feeds on rodents, lizards, and frogs. As well as biting, the Indian cobra can attack or defend itself from a distance by "spitting" venom, which, if it enters the opponent's eyes, causes severe pain and damage. The snake actually forces the venom through its fangs, by exerting muscular pressure on the venom glands, so that it sprays out in twin jets for 2 m or more.



Behavior of Indian Cobra

When threatened, the Indian Cobra will assume its characteristic posture. It will raise the front one-third of its body and elongate its long, flexible neck ribs and loose skin to form its distinctive hood.

Physical Characteristics of Indian Cobra

The Indian Cobra's most known characteristic features are the wide black band on the underside of the neck, and the hood marking design which shows half-rings on either side of the hood. It is a smooth-scaled snake with black eyes, a wide neck and head, and a medium-sized body. Its coloring varies from black, to dark brown, to a creamy white. The body is usually covered with a spectacled white or yellow pattern, which sometimes forms ragged bands. Indian cobra may grow from 1.8m to 2.2m.



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Most Poisonous - The King Cobra

The King Cobra is the largest of all poisonous snakes. This sometimes 5 meter long, and is entirely a snake eater. It enjoys Pythons, other Cobras, and even its own species. The King is aggressive, unpredictable, and can strike without provocation. It is most intelligent. When erect it can stand up to 2 meters in height.

Food Habits

The Indian cobra feeds on rodents, lizards and frogs. It bites quickly, and then waits while its venom damages the nervous system of the prey, paralyzing and often killing it. Like all snakes, N. naja swallows its prey whole. This species sometimes enters buildings in search of rodent prey.

Other Animals found in Ramgarh forests:

Other common animals of Deer/ antelope family are Chital (Axis axis), Common deer and Sambhar deer

Other commonly found Snakes:

A brief description of few more common snakes other than cobra and King Cobra in Ramgarh Division is as follows:

Indian Rock Python (Python molurus):

A large thick-bodied snake found in many parts of India. Python snakes can be found in dense as well as open Indian forests, up to an elevation of about 2000 mts. Python snake, also known as



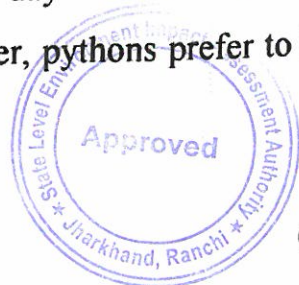
Ajgar, is one of the most massively built snakes of the Indian subcontinent. One of the unique features of the Rock pythons of India is that they can raise their body temperature above the ambient level, through muscular contractions.

Python snake grows to an average length of somewhere around 4 m.

Its weight varies from 70 to 129 pounds. The head is flat, with small eyes and large nostrils. An adult python is white or yellow in color, depending upon its habitat.

Rock python of India is a lethargic creature, moving only while hunting a prey or when threatened. It shows great swimming ability and is quite at ease in water.

The diet of Pythons consists of mammals, birds and reptiles. After eating a huge meal, they may go without food for many days. There is also an incidence of an Indian python not eating for 2 years at a stretch. However, pythons prefer to live near a permanent source of water, like rivers and lakes.



Common Sand Boa (*Eryx conicus*):

A short thick-bodied snake found in the plains and low hills of India. They are nocturnal and hunt after dark.

Rat Snake (*Ptyas mucosus*):

A large-scaled snake found all over India up to an elevation of about 4000 mts. It is capable of adapting to almost any environment. They are prodigious rat-eaters.

Common Krait (*Bungarus caeruleus*):

A medium-sized snake with thin white bands on its body. Found almost all over India up to an elevation of about 1700 mts. They are nocturnal in habit.

Banded Krait (*Bungarus fasciatus*):

A medium to large-sized snake with prominent yellow and black bands on its body. Found also in northeast India, Bihar, Orissa, Madhya Pradesh, Andhra Pradesh and Uttar Pradesh up to an elevation of 1500 mts.

Russell's Viper (*Vipera russellii*):

A medium to large-sized deadly snake with a characteristic bright pattern on its body. Found also all over India, both in the plains and hills up to an elevation of about 3000 mts. They are very common in the villages of the division.

Bamboo Pit Viper (*Trimeresurus gramineus*):

A small-sized snake with a triangular head. Found also in the hills of central and eastern India. It prefers cold, thick vegetation along watercourses and bamboos and other dense foliage.

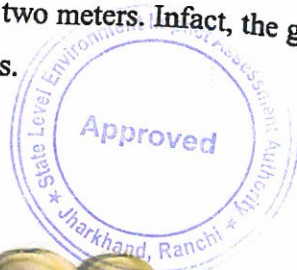
Other Reptiles

Chameleon

There is only one species of chameleons found in the Indian subcontinent, scientifically known as *Chamaeleo zeylanicus*. The term 'chameleon' is a combination of two Greek words, 'Chama' meaning 'on the ground/earth' and 'Leon', meaning 'lion'. Thus, 'chameleon' means 'earth lion'.

Tortoise

Indian tortoise belongs to the Testudines Order and, like turtles, has a shell as its protective covering. It has both an endoskeleton as well as an exoskeleton. The length of a tortoise varies between a few centimeters and two meters. In fact, the growth of a tortoise depends upon the amount of food and water it eats.



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