

MINUTES OF THE 115TH MEETING OF STATE LEVEL EXPERT APPRAISAL COMMITTEE (SEAC), JHARKHAND HELD ON 23RD, 24TH, 25TH, 26TH AND 27TH JULY, 2024.

The 115th meeting of State Level Expert Appraisal Committee (SEAC), Jharkhand was held on 23rd, 24th, 25th, 26th and 27th July, 2024 under the Chairmanship of Shri Ashok Kumar Singh, IFS (Retd.) in the Conference Room at SEAC, Ranchi.

The following members were present:

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

SEIAA forwarded various projects to the SEAC for the technical appraisal after the last SEAC meeting held on 25th, 26th, 27th, 28th & 29th June, 2024. These projects have been put up for discussions. Besides, these Projects, wherein PP's were asked to provide requisite information / clarifications in the earlier meeting of SEAC, were also considered for appraisal. The Project Proponents have been asked to make technical presentation for the appraisal of their projects before the committee.

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

Day 1 : July 23rd, 2024 [Tuesday]

A. Corrigendum EC letter for :

- i. **Salboni Stone Mine of Shri Ragda Murmu, Mouza : Salboni, Thana no. : 115, Distt. : Pakur, Jharkhand (1.846 Ha) (Proposal no. : SIA/JH/MIN/478673/2024)**

The PA's vide online application no. **SIA/JH/MIN/478673/2024** has requested for necessary correction in Environmental Clearance issued vide letter no. EC/SEIAA/2023-24/2623/2023/225, dated 14.08.2023 with regard to category of project.

The project has been applied and appraised under **B1 category** in the State Expert Appraisal Committee, Jharkhand during its 96th meeting held on 16-19.08.2022 and SEIAA, Jharkhand has approved the ToRs in 97th meeting held on 25th & 26th August, 2022. ToR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2022-23/2623/2022/250, dated 02.09.2022. The final EIA / EMP submitted by PAs to SEIAA on 15.07.2023 and which was forwarded to SEAC on 15.07.2023 for appraisal.

Erroneously **category B2** was mentioned in the EC letter instead of **B1 category**.

The SEAC considered the same and recommends for issuance of corrigendum EC mentioning **category B1**. Other terms & conditions mentioned in the previous EC letter no. EC/SEIAA/2023-24/2623/2023/225, dated 14.08.2023 shall remain the same.

- ii. Chhota Bathan Pahari Stone Mine of Shri Rajesh Kumar, Mouza : Chhota Bathan Pahari, P.S. : Gopikandar, Distt. : Dumka, Jharkhand (2.80 Ha). (Proposal No. : SIA/JH/MIN/ 488664/ 2024).

The PA's vide online application no. SIA/JH/MIN/ 488664/ 2024 has requested for necessary correction in Environmental Clearance issued vide letter no. EC/SEIAA/2021-22/2324/2021/58, dated 15.07.2021 with regard to mentioning correct name of Police Station (P.S) i.e. Gopikandar, the revised details is being given below :

"Chhota Bathan Pahari Stone Mine of Shri Rajesh Kumar, Mouza : Chhota Bathan Pahari, P.S. : Gopikandar, Distt. : Dumka, Jharkhand (2.80 Ha)"

The SEAC considered the same and recommends for issuance of corrigendum EC with corrected details as stated above. Rest other terms & conditions mentioned in the previous EC letter no. EC/SEIAA/2021-22/2324/2021/58, dated 15.07.2021 shall remain the same.

B. Matter referred by SEIAA

- i. Regarding applicability of Environmental Clearance for the project of Bokaro Airport of M/s Bokaro Steel Plant (SAIL).

As per EIA notification, 2006 as amended for time to time, Airport projects are listed under serial 7(a) of the scheduled. The projects are classified as follows :

- All new projects including airstrips, which are for commercial use are categorized as Category 'A' projects and to be appraised at the Central Level.**
- All expansion projects, including airstrips which are for commercial use are categorized as Category 'B' projects and to be appraised at the State Level.**

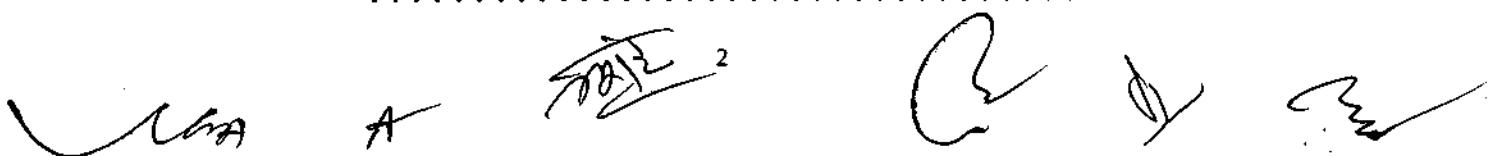
The SEAC has examined all the documents annexed with letter no. 31, dated 05.04.2024 from Member Secretary, SEIAA, Jharkhand addressed to the Joint Secretary, MoEF&CC, Govt. of India.

On examination of the documents it is seen that the existing Airport is a captive airport of M/s Bokaro Steel Plant (SAIL) and that it is not a commercial airport.

Now, the proposal is to convert this captive airport into a commercial airport.

Hence, the SEAC is of the view that as far as the commercial activities of the airport are concerned, it is to be considered as a new commercial airport.

Accordingly, it is to be considered as Category 'A' project and to be appraised at the Central Level.

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Day 2 : July 24th, 2024 [Wednesday]

Consideration of Proposals

- 1. Vinayak Avenue Residential Building of M/s Vidhi Developers Pvt. Ltd., Village : Dobo, Tehsil : Chandil, Distt. : Seraikella-Kharsawan, Jharkhand.**

(Proposal no.: SIA/JH/INFRA2/485525/2024)

Project Category: B2 - 8(a) Building and Construction Projects – Application for Environment Clearance (EC) as per EIA notification, 2006.

Name of the consultant: Crystal Consultants, Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 24.07.2024.

Item	Details																								
Project Name	VINAYAK AVENUE RESIDENTIAL BUILDING																								
Location	Village : Dobo Tehsil : Chandil District : SeraikellaKharsawan State : Jharkhand <table border="1"> <thead> <tr> <th>Latitude</th><th>Longitude</th></tr> </thead> <tbody> <tr> <td>22°51'17.83N</td><td>86°10'08.38"E</td></tr> <tr> <td>22°51'18.43"N</td><td>86°10'0.12"E</td></tr> <tr> <td>22°51'17.44"N</td><td>86°10'09.38"E</td></tr> <tr> <td>22°51'18.80"N</td><td>86°10'09.55"E</td></tr> <tr> <td>22°51'14.60"N</td><td>86°10'09.62"E</td></tr> <tr> <td>22°51'16.99"N</td><td>86°10'10.33"E</td></tr> <tr> <td>22°51'18.63"N</td><td>86°10'10.82"E</td></tr> <tr> <td>22°51'18.23"N</td><td>86°10'11.68"E</td></tr> <tr> <td>22°51'16.39N</td><td>86°10'11.88"E</td></tr> <tr> <td>22°51'17.92"N</td><td>86°10'12.51"E</td></tr> <tr> <td>22°51'18.15"N</td><td>86°10'12.51"E</td></tr> </tbody> </table>	Latitude	Longitude	22°51'17.83N	86°10'08.38"E	22°51'18.43"N	86°10'0.12"E	22°51'17.44"N	86°10'09.38"E	22°51'18.80"N	86°10'09.55"E	22°51'14.60"N	86°10'09.62"E	22°51'16.99"N	86°10'10.33"E	22°51'18.63"N	86°10'10.82"E	22°51'18.23"N	86°10'11.68"E	22°51'16.39N	86°10'11.88"E	22°51'17.92"N	86°10'12.51"E	22°51'18.15"N	86°10'12.51"E
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Total Built-Up Area & its break - up	S. No	Description	Total Area (S.qm.)
	1	Common Area	792.75
	2	Ground Coverage	2550.84
	3	Greenbelt (Tree Cover)	1409.8
	4	Surface Parking	1200
	5	RWH Tank	11.1
	6	Organic Waste Convertor (OWC)	22
	7	Sewage Treatment Plant (STP)	80
	8	Drive Way	1000
	9	Open Area & Other	263.31
	10	Total Built Up Area	28963.30
	11	F.A.R	Proposed: 3.00 (permissible: 3.00)
	12	Maximum height of building	53.00m
	13	Total no. of Dwelling Units	Total: 189 (Residential flats: 2BHK-49 3BHK-139number of units), 1 Shop
	14	No. of Floors	Ground Floor and 15 Floors
Number of Block	2 Blocks (A & B)		
Population	Total No. of Occupancy: 1080		Floating Population: 113
Municipal Solid Waste	712.80 Kg/Day including 285.12 Kg/Day Bio-degradable & 427.68 Kg/Day Non Bio-degradable		
Parking	Car – 209 Two Wheeler – 212 Visitor Car – 21		
Power Requirement	Power Requirement	8196 KWH per Day	
	Energy Saving	983.52 KWH per Day (12%)	
	Power Back-up	500 KVA	
	Renewal Energy	225 KWH (2.71% of the Demand)	
RWH Pits	6 Nos of Recharge pit		

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Total no. of Dwelling Units	Total: 188
No. of Floors	G+15
Total Project Cost	Rs. 60 Crores.
EMP Cost (Construction Phase)	Capital Cost: Rs. 29.00 Lakh Recurring Cost: Rs. 11.00 Lakh
EMP Cost (Operational Phase)	Capital Cost: Rs. 100.00 Lakh Recurring Cost: Rs. 6.00 Lakh
Disaster Management	Separate Assembly Points will be marked for each section. Residents will be made aware of the safety protocols and escape routes.

Land Details :

Khata no.	Plot no.
17	471
55	472

**❖ Water & Wastewater
Water Demand**

Water Balance (KLD)		Source
Domestic Water Demand for Dwelling Units @90L/Person/Day	106.83	Fresh Water
Flushing Demand for Dwelling Units @45L/Person/Day	53.42	Treated Water
Horticulture	5.00	Treated Water
Dust Suppression	5.00	Treated Water
Car Washing	5.00	Treated Water
Domestic Water Demand for Fix Population @ Shop @25 L per Person Per Day	0.025	Fresh Water
Flushing Water Demand for Fix Population @ Shop @20 L per Person Per Day	0.020	Treated Water
Domestic Water Demand for Floating Population @ Shop @5 L per Person Per Day	0.025	
Flushing Water Demand for Floating Population @ Shop @10 L per Person Per Day	0.050	
Total	175.37	

Fresh Water Demand	106.88	Municipal Water Supply System
Treated Water Demand	68.49	Treated Water from Sewage Treatment Plant (STP)

Waste Water Management

STP Calculation (KLD)			
Total Domestic Water	106.88	55.50	80% of Domestic Water is Waste Water
Total Flushing Water	53.49	53.49	100% of Flushing Water is Waste Water
Total Volume of Waste Water		138.99	
STP Capacity		150.00	
Waste Water Management (KLD)			
<i>Volume of Treated Water from STP i.e., 80% of Waste Water</i>		111.12	
Break-Up			
Flushing		53.49	
Horticulture		5.00	
Dust Suppression		5.00	
Car Washing		5.00	
Discharge to Municipal Storm Water Drainage System		42.63	
Loss 20 % loss on account of evaporation, loss in conveyance and processing.		27.87	

❖ Connectivity

Nearest Railway Station	Tatanagar Railway Station	10.50 Km
Nearest Airport	Birsa Munda Airport, Ranchi	120 Km
Nearest Highway	NH – 33	3.00 Km
Educational Institute	Chimtl Primary School	12.33 Km
	Purnapani Primary School	14.72 Km
	Narayan Private ITI	13.46 Km
	College	








Healthcare Facilities	TMH Main Hospital	5.90 Km
Waterbody	Swarnrekha River	1.87 Km
	Kharkai River	2.00 KM
	Dimna Lake	7.62 Km
National Park / Wildlife Sanctuary / Corridors / ESZ	Dalma Wildlife Sanctuary	3.40 km

❖ **Solid Waste Management**

Construction Phase

Solid Waste generated during construction phase would include top soil, brick bats, pieces of reinforcing roads, pieces of wood boards & waste of other construction material, cans of paints electrical wire, etc.

Top Soil would be separately stored at pre-defined location within the site & preserved for landscaping. Sub – Soil would be stored for reuse in road making, plinth filling, etc.

Brickbats wastes of concrete would also be stored for road construction, etc. Surplus C & D waste would be handed over to Municipal Solid Waste Management Facility. E-Waste & Hazardous waste (cans of paints_ would be collected in separates containers. Recyclable wastes including bags, packing, pcs of steel rods sold to rag pickers.

Operational Phase

Estimated quantity of municipal solid waste Community building & residential building.

During operational phase of buildings municipal solid waste would be generated. They would be stored in different colour bins.

✓ Recyclable Waste	- Blue
✓ Non-Biodegradable Waste	- Black
✓ Bio-Degradable Waste	- Green
✓ E-Waste	- Yellow
✓ Hazardous Waste	- Red

Recyclable Wastes would be handed to rag pickers.

Bio-Degradable Waste would be treated into Organic Waste Convertor (OWC) and the product will be utilize as fertilizer.

E-Waste & Hazardous Wastes would be handed over to authorized recyclers.

Energy Conservation Measures

- ✓ Replacing 2 x 13W Down lighter in lift lobby with 17W LED.
- ✓ Replacing T5 Tubelight in staircase with 20W LED.
- ✓ Replacing 70W MHL Street lights with 40W LED.
- ✓ Providing 100% of Street lights & common lighting on **SOLAR**.
- ✓ Replacing normal lighting with LED for Landscape.

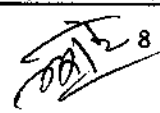
- ✓ Using Variable Frequency Drive (VFD) for Lift machines, we can save 10% of consumption.
- ✓ By using Regenerative type lifts, we can save 30% of Consumption.
- ✓ By using Energy efficient motors, we can save 10% of energy.

BUDGETARY PROVISION:

EMP COST FOR CONSTRUCTION PHASE			
S.No	Description	Capital Cost (Rs. Lakhs)	Recurring Cost (Rs. Lakhs/Annum)
1.	Construction Site to be closed with 3 m high corrugated sheet	10.00	0.00
2.	A coustic enclosure for DG Set	2.00	0.00
3.	Regular Water Sprinkling by the hired tankers	0.00	10.00
4.	Shed for storage of building material	5.00	0.00
5.	Temporary Septic Tank	3.00	0.00
6.	Drinking Water Facility	0.50	0.00
7.	Storm Water Drainage System	2.50	0.00
8.	Arrangement (HDPE Colored bins) for storage of MSW	0.50	0.00
9.	PPE for Worker & Health Care	0.50	0.00
10.	Miscellaneous	5.00	1.00
TOTAL		29.00	11.00

EMP COST FOR OPERATION PHASE			
S.No	Description	Capital Cost (Rs. Lakhs)	Recurring Cost (Rs. Lakhs / Annum)
1.	Air Pollution Control and Noise Pollution Control (including cost of land scaping and Green Belt)	5.00	1.00
2.	Waste Water Management including STP (Capacity:150 KLD)	35.00	0.50








3.	Solid Waste Management including OWC (capacity: 50 Kg / Hr.)	5.00	1.00
4.	6 Rain Water Harvesting Pits	12.00	0.50
5.	Solar lighting, CFL & Solar Panel System	40.00	3.00
6.	Miscellaneous	3.00	0.00
Total		100.00 lakhs	6.00 lakhs

Statutory Clearances :

1	Land Docs	:	Land Owner : M/s Vidhi Developers Pvt. Ltd.
2	DFO Territorial	:	DFO, Saraikela Forest Division, Saraikela vide letter no. 2264, dated 30.11.2023 certified that the distance of reserved / protected forest is more than 250 meters from project site.
3	DFO Wildlife	:	DFO, Dalma Elephant Project vide letter no. 622, dated 24.04.2024 certified that proposed project site is out side Eco Sensitive Zone of Dalma Wildlife Sanctuary.
4	CO certificate	:	The CO, Chandil vide letter no. 602, dated 27.06.2024 has mentioned the plot no. of the project is not recorded as "Jangle Jhari" in R.S. Khatiyani & Register II.
5	AAI NOC	:	Airport authority of India issued NOC vide NOC ID no. JAMS /EAST /B/ 041024/978269, dated 01.05.2024 valid up to 29.04.2032.
6	Building Plan approval	:	Building plan approved by Saraikela Kharsawan Zila Parishad vide memo no. 0097, dated 02.02.2024.
7	Fire Department	:	Fire Advisory has been issued by Fire Department, Jharkhand, Ranchi, vide memo no. 6701/Tech./2023, dated 03.12.2023.

Based on the presentation made and information provided, the Committee decided that the proposal for Vinayak Avenue Residential Building of M/s Vidhi Developers Pvt. Ltd., Village : Dobo, Tehsil : Chandil, Distt. : Seraikella-Kharsawan, Jharkhand is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure –I alongwith the following specific conditions :

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

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

2. Anand Vatika Residential Building of M/s Anchor Buildtech, Village : Namkum, Tehsil : Namkum, Distt. : Ranchi, Jharkhand.

(Proposal no.: SIA/JH/INFRA2/488610/2024)

Project Category: B2 - 8(a) Building and Construction Projects – Application for Environment Clearance (EC) as per EIA notification, 2006.

Name of the consultant: Crystal Consultants, Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 24.07.2024.

Item	Details																																		
Project Name	ANAND VATIKA RESIDENTIAL BUILDING																																		
Location	Village : Namkum Tehsil : Namkum District: Ranchi State : Jharkhand <table><tr><th>Latitude</th><th>Longitude</th></tr><tr><td>23°20'0.98"N</td><td>85°22'5.09"E</td></tr><tr><td>23°20'1.48"N</td><td>85°22'5.14"E</td></tr><tr><td>23°20'1.54"N</td><td>85°22'5.38"E</td></tr><tr><td>23°20'0.98"N</td><td>85°22'5.49"E</td></tr><tr><td>23°20'1.53"N</td><td>85°22'5.85"E</td></tr><tr><td>23°20'0.77"N</td><td>85°2'5.88"E</td></tr><tr><td>23°20'1.66"N</td><td>85°22'5.88"E</td></tr><tr><td>23°20'0.54"N</td><td>85°22'5.99"E</td></tr><tr><td>23°20'0.23"N</td><td>85°22'6.10"E</td></tr><tr><td>23°20'1.71"N</td><td>85°22'6.40"E</td></tr><tr><td>23°20'1.65"N</td><td>85°22'7.17"E</td></tr><tr><td>23°20'0.10"N</td><td>85°22'7.75"E</td></tr><tr><td>23°19'59.95"N</td><td>85°22'8.47"E</td></tr><tr><td>23°20'1.73"N</td><td>85°22'8.59"E</td></tr><tr><td>23°20'1.70"N</td><td>85°22'9.98"E</td></tr><tr><td>23°20'0.98"N</td><td>85°22'5.09"E</td></tr></table>	Latitude	Longitude	23°20'0.98"N	85°22'5.09"E	23°20'1.48"N	85°22'5.14"E	23°20'1.54"N	85°22'5.38"E	23°20'0.98"N	85°22'5.49"E	23°20'1.53"N	85°22'5.85"E	23°20'0.77"N	85°2'5.88"E	23°20'1.66"N	85°22'5.88"E	23°20'0.54"N	85°22'5.99"E	23°20'0.23"N	85°22'6.10"E	23°20'1.71"N	85°22'6.40"E	23°20'1.65"N	85°22'7.17"E	23°20'0.10"N	85°22'7.75"E	23°19'59.95"N	85°22'8.47"E	23°20'1.73"N	85°22'8.59"E	23°20'1.70"N	85°22'9.98"E	23°20'0.98"N	85°22'5.09"E
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Total Built-Up Area & its break - up	S. No.	Description	Total Area (S.qm.)
	1	Surrender Free of Cost	27.92
	2	Ground Coverage	1264.87
	3	Greenbelt (Tree Cover)	825.46
	4	Green Cover (Lawn / Playground)	245.14
	5	Surface Parking	842.62
	6	RWH Tank	11.10
	7	Organic Waste Convertor (OWC)	16.95
	8	Sewage Treatment Plant (STP)	19.67
	9	Drive Way	1280.30
	10	Open Area & Other	697.73
	11	Total Built Up Area	21282.66
	12	F.A.R	Proposed: 3.26 (permissible: 3.30)
	13	Maximum height of building	42.00 m
	14	Total no. of Dwelling Units	Total: 189 (Residential flats: 1BHK-30, 2BHK-53 & 3BHK-105 number of units & 1 Shop)
	15	No. of Floors	Basement, Ground Floor and 13 Floors
Number of Block	1 Blocks		
Population	Total No. of Occupancy: 1016	Floating Population: 111	
Municipal Solid Waste	677.20 Kg per Day including 270.88 Kg per Day Bio-degradable Waste (40% of MSW) & 406.32 Kg per Day Non- Bio-degradable Waste (60% of MSW)		
Parking	170 Car Parking 18 Visitor Car Parking 188 Two Wheeler Parking Area : 4888.09 Sq.m.		
Power Requirement	Power Requirement	8,333.34 kW per day	
	Energy Saving	20 %	
	Power Back-up	600 KVA DG Set	
	Renewal Energy	1% i.e. 83.3334 kW per day	
RWH Pits	2 Nos of Recharge pit		
Total no. of Dwelling Units		Total: 189	
No. of Floors		B+G+13	
Total Project Cost		Rs. 40 Crores.	

EMP Cost (Construction Phase)	Capital Cost: Rs. 23.00 Lakh Recurring Cost: Rs. 11.00 Lakh
EMP Cost (Operational Phase)	Capital Cost: Rs. 70.00 Lakh Recurring Cost: Rs. 6.00 Lakh
Disaster Management	Separate Assembly Points will be marked for each section. Residents will be made aware of the safety protocols and escape routes.

Land Details :

Khata no.	Plot no.
66	639 & 640

❖ **Water & Wastewater**
Water Demand

Water Balance (KLD)		Source
Domestic Water Demand for Dwelling Units @90L/Person/Day	101.43	Fresh Water
Flushing Demand for Dwelling Units @45L/Person/Day	50.72	Treated Water
Horticulture	5.00	Treated Water
Dust Suppression	5.00	Treated Water
Car Washing	5.00	Treated Water
Domestic Water Demand for Fix Population @ Shop @25 L per Person Per Day	0.025	Fresh Water
Flushing Water Demand for Fix Population @ Shop @20 L per Person Per Day	0.020	Treated Water
Domestic Water Demand for Floating Population @ Shop @5 L per Person Per Day	0.045	
Flushing Water Demand for Floating Population @ Shop @10 L per Person Per Day	0.090	
Total	167.33	
Fresh Water Demand	101.50	Municipal Water Supply System

Treated Water Demand	65.83	Treated Water from Sewage Treatment Plant (STP)

Waste Water Management

STP Calculation (KLD)			
Total Domestic Water	101.50	81.20	80% of Domestic Water is Waste Water
Total Flushing Water	50.83	50.83	100% of Flushing Water is Waste Water
Total Volume of Waste Water		132.03	
STP Capacity		150.00	
Waste Water Management (KLD)			
Volume of Treated Water from STP i.e., 80% of Waste Water			105.62
Break-Up			
Flushing			50.83
Horticulture			5.00
Dust Suppression			5.00
Car Washing			5.00
Discharge to Municipal Storm Water Drainage System			39.79
Loss 20 % loss on account of evaporation, loss in conveyance and processing.			26.40

❖ Connectivity

Nearest Railway Station	Nearest Railway is Namkum Railway Station is about 3.65 Km, Ranchi Railway Station, which is about 3.74 Km & Hatia Railway Station is about 6.55 Km.
Nearest Airport	Nearest Airport is Birsa Munda Airport Ranchi, which is about 4.75 Km.
Nearest Highway	Nearest Highway is NH-33 which is about 0.41 Km away.
ESZ	Not within 15 km
Waterbody	Getalsud Dam (15 Km) Kanke Dam (9.20 Km) Dhurwa Dam (12.48 Km) Subarnarekha River (2.00 Km)








Defense Installation	Army Head Quarter, Namkum (2.00 Km)
Educational Institute	Delhi Public School (6.82 KM), Kairali School (7.26 Km), Gossner High School (5.00 Km), Zila School, Ranchi (6.15 Km), GD Goenka Public School (0.51 Km), Acharyakulam Ranchi (2.35 Km)
Healthcare Facilities	Sadar Hospital (5.82 Km) RIMS (6.16 Km) Paras Hospital (9.63 Km) The Vinayka Hospital And Research Centre (0.50 Km) Rajprastha Hospital (0.95 Km)

❖ Solid Waste Management

Construction Phase

Solid Waste generated during construction phase would include top soil, brick bats, pieces of reinforcing roads, pieces of wood boards & waste of other construction material, cans of paints electrical wire, etc.

Top Soil would be separately stored at pre-defined location within the site & preserved for landscaping. Sub – Soil would be stored for reuse in road making, plinth filling, etc.

Brickbats wastes of concrete would also be stored for road construction, etc. Surplus C & D waste would be handed over to Municipal Solid Waste Management Facility. E-Waste & Hazardous waste (cans of paints_ would be collected in separates containers. Recyclable wastes including bags, packing, pcs of steel rods sold to rag pickers.

Operational Phase

Estimated quantity of municipal solid waste Community building & residential building.

During operational phase of buildings municipal solid waste would be generated. They would be stored in different colour bins.

✓ Recyclable Waste	- Blue
✓ Non-Biodegradable Waste	- Black
✓ Bio-Degradable Waste	- Green
✓ E-Waste	- Yellow
✓ Hazardous Waste	- Red

Recyclable Wastes would be handed to rag pickers.

Bio-Degradable Waste would be treated into Organic Waste Convertor (OWC) and the product will be utilize as fertilizer.

E-Waste & Hazardous Wastes would be handed over to authorized recyclers.

Energy Conservation Measures

- ✓ Replacing 2 x 13W Down lighter in lift lobby with 17W LED.
- ✓ Replacing T5 Tubelight in staircase with 20W LED.

- ✓ Replacing 70W MHL Street lights with 40W LED.
- ✓ Providing 100% of Street lights & common lighting on **SOLAR**.
- ✓ Replacing normal lighting with LED for Landscape.
- ✓ Using Variable Frequency Drive (VFD) for Lift machines, we can save 10% of consumption.
- ✓ By using Regenerative type lifts, we can save 30% of Consumption.
- ✓ By using Energy efficient motors, we can save 10% of energy.

BUDGETARY PROVISION:

EMP COST FOR CONSTRUCTION PHASE			
S.No	Description	Capital Cost (Rs. Lakhs)	Recurring Cost (Rs. Lakhs / Annum)
1.	Construction Site to be closed with 3 m high corrugated sheet	10.00	0.00
2.	A coustic enclosure for DG Set	2.00	0.00
3.	Regular Water Sprinkling by the hired tankers	0.00	10.00
4.	Shed for storage of building material	5.00	0.00
5.	Temporary Septic Tank	3.00	0.00
6.	Drinking Water Facility	0.50	0.00
7.	Storm Water Drainage System	2.50	0.00
8.	Arrangement (HDPE Colored bins) for storage of MSW	0.50	0.00
9.	PPE for Worker & Health Care	0.50	0.00
10.	Miscellaneous	5.00	1.00
TOTAL		29.00	11.00








EMP COST FOR OPERATION PHASE			
S.No	Description	Capital Cost (Rs. Lakhs)	Recurring Cost (Rs. Lakhs / Annum)
1.	Air Pollution Control and Noise Pollution Control (including cost of land scaping and Green Belt)	5.00	1.00
2.	Waste Water Management including STP (Capacity:150 KLD)	35.00	0.50
3.	Solid Waste Management including OWC (capacity: 50 Kg / Hr.)	5.00	1.00
4.	6 Rain Water Harvesting Pits	12.00	0.50
5.	Solar lighting, CFL & Solar Panel System	40.00	3.00
6.	Miscellaneous	3.00	0.00
Total		100.00 lakhs	6.00 lakhs

Statutory Clearances :

1	Land Docs	:	Private Land :- Owned by 09 persons. M/s Anchor Buildtech has entered in to a development agreement with the land owners.
2	DFO Territorial	:	DFO, Ranchi vide letter no. 1388, dated 20.04.2024 certified that the distance of reserved / protected forest is more than 250 meters from project site.
3	DFO wildlife	:	DFO, Wildlife Ranchi vide letter no. 294, dated 16.04.2024 certified that proposed project site is out side Eco Sensitive Zone of Palkot Wildlife Sanctuary.
4	CO certificate	:	The CO, Namkum, Ranchi vide letter no. 599 (ii), dated 21.06.2024 has mentioned the plot no. of the project is not recorded as "Jungle - Jhari" in R.S. Khatyan & Register II.
5	AAI NOC	:	Airport authority of India issued NOC vide NOC ID no. RANC /EAST /B/ 012224/892702, dated 11.03.2024 valid up to 09.03.2032.

6	Building Plan approval	:	Conceptual Plan has been submitted to Ranchi Municipal Corporation vide case no. RMC/GH/0704/W47/2023, dated 15.12.2023 for approval.
7	Fire Department	:	Fire Advisory has been issued by Fire Department, Jharkhand, Ranchi, vide memo no. 2013/Tech./2024, dated 12.03.2024.

Based on the presentation made and information provided, the Committee decided that the proposal for Anand Vatika Residential Building of M/s Anchor Buildtech, Village : Namkum, Tehsil : Namkum, Distt. : Ranchi, Jharkhand is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure –I alongwith the following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign “Ek Ped Ma Ke Naam” and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- II. Ground water to be drawn for use in the project only after obtaining permission from the Competent Authority.
- III. Environment management system including organization structure to be drawn to ensure compliance of EC conditions stipulated based on principles of Continual Improvement and periodical management review.
- IV. All raw material to be stored only under covered shed.
- V. PAs to offset (upto20%) consumption of conventional energy sources by promoting use of solar energy, passive energy utilization, optimum fenestration, shading effect and heat islands.
- VI. Developers to promote energy conservation measures such that it offsets not less than 02 % of connected load. It is to be achieved by solar panels etc meeting ECBC norms.
- VII. Trees should be developed & maintained not less than 15% of project area.
- VIII. Organic Waste Converter (OWC) to be installed of sufficient capacity such that all organic waste (bio degradable) generated is composted at source only.
- IX. Developers/Company to install STP of sufficient capacity such that all the sewer produced is treated and reused.
- X. Developers/Company to install Rain water harvesting structures such that all the roof top water runoff is collected and harvested including reuse on 100% basis.
- XI. Developers/Company to conduct and submit carbon footprint and carbon sequestration study report including mitigation measures as a part of EC compliance.

- XII. Water runoff originating from open non constructed areas of project premises to be harvested /guided in such a way that it does not create water logging condition outside.
- XIII. Sufficient number of EV fast charging points to be installed.
- XIV. MSW Collection centre should be located in isolated and preferably unmanned area. Movement of the vehicle carrying waste should be under tarpaulin covered condition only. Route of vehicle should be such that it avoids residential areas as far as practical.
- XV. ISO 14k EMS system standard to be followed for implementation of EMPs with MRM in place for feedback to Sr management.
- XVI. A cycling tract to be provided in residential complex so as to save on fuel and make in campus movement environment friendly.

3. Brick Soil Mining for M/s Ranjana Bricks, Village : Jogyara, Thana : Klisko, Thana no. : 89, Distt. : Lohardaga, Jharkhand (0.347 Ha).

(Proposal no.: SIA/JH/MIN/470146/2024)

Project Category: B2 – 1(a) Mining of Minerals : Application for Environmental Clearance (EC).

Name of the consultant : Crystal Consultants, Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 24.07.2024.

EC Application for: Earthwork / Soil Mining (1200 Cum Per Annum for using of making of 6,00,000 Bricks Per Annum)

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Brick Soil Mining for M/s Ranjana Bricks
2	Lessee:	: M/s Ranjana Bricks Proprietor-Sri Pankaj Sahu
3	Lessee Address	: At- Barchorgai Jalka Toli, P.O.- Hisri, District-Lohardaga, Jharkhand-835302
4	Lease Area	: 0.347 Ha. Acres: 0.86 Acre
5	Type of Land	: Non-Forest – Rayati Land
6	Project Cost	: 8.00 Lakhs
7	EMP Budget	: Capital: 5.49 Lakhs Recurring: 5.465 Lakh / year
8	CSR / CER Budget	: -
9	New or Expansion	: New Project

10	Mineable Reserves	:	Cu.M.: 5300 cum
11	Mine Life	:	5 years
12	Man power	:	10
13	Water Requirement	:	Total 2.9 KLD Including Domestic (0.5 KLD), Dust Suppression (1.5 KLD) & Horticulture (1 KLD)
14	Water Source	:	By authorised hired tanker
15	DG Set / power	:	---
16	Crusher	:	---
17	Nearest Water Body	:	South Koel River (5.10 km in East direction)
18	Nearest Habitation	:	Dagru village (5 m in East direction)
19	Nearest Rail Station	:	Lohardaga Railway Station, 12.12 Km in East direction
20	Nearest Air Port	:	Birsa Munda Airport, Ranchi, 76.67 km in South-East direction
21	Nearest Forest	:	Nil
22	Road & Highways	:	National Highway – 143A is about 9.48 km in South-East direction

CO-ORDINATES

1	Latitude	N23°26'46.64"	TO N23°26'49.37"
2	Longitude	E84°35'14.16"	TO E84°35'18.34"

LAND DETAILS

Khata no.	Plot no.
29	323 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Land agreement made.
2	CO	:	The CO, Kisko (Lohardaga) vide letter no. 699, dated 05.10.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyani & Register II.
3	DMO	:	DMO, Lohardaga vide memo no. 1196/M, dated 07.10.2023 certified that 01 other mining lease area (1.29 Acre) exists within 500 m radius from proposed project site and total area is 2.49 Acre.
4	DFO Wild Life	:	DFO, Wildlife Ranchi vide letter no. 1058, dated 11.10.2023 certified that the proposed project site is outside Eco Sensitive








		Zone of Palkot Wildlife Sanctuary.
5	DFO Territorial	: Division Forest Officer, Lohardaga Forest Division vide letter no. 1789, dated 09.10.2023 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	: This project is mentioned in approved District Survey Report (DSR) of Lohardaga District (Serial no. 55, Page no. 32).
7	Gram Sabha	: BDO, Kisko (Lohardaga) vide letter no. 1017, Dated 17.10.2023 informed that Gram Sabha conducted on 11.10.2023.
8	Mine Plan Approval	: Approved by DMO, Lohardaga vide Memo No. 1404/M, dated 02.12.2023.
9	Qualified Person	: Mr. P.K. Sen was present in the meeting and affirmed that the mine plan has been made by him.

Working Details

1	Mining Method	: Opencast Method, Manual
2	Quarry Area	: 5 years – 0.313 ha. Life of Mine – 5 Years
3	Waste Generation	: NA Life of Mine –5 Years
4	Stripping Ratio	: NA
5	Working Days	: 200
6	Benches: size & No	: 1m x 1m
7	Elevation of Mine	: Highest elevation: 705m AMSL Lowest elevation: 704m AMSL
8	Ground Level Elevation	: 704 m AMSL to 705 m AMSL
9	Ultimate Working Depth	: 2m
10	Water Table	: 686 m AMSL in Pre-Monsoon to 692 m AMSL in Post-Monsoon.
11	Topography of Mine	: Almost flat
12	Explosive Requirement	: Nil
13	Diesel/Fuel requirement	: Nil

Production Details

Year	Production of Recoverable Soil Volume (in Cum)	Production of Brick Blocks (in nos.)
1 st	1200	6,00,000

2 nd	1200	6,00,000
3 rd	1200	6,00,000
4 th	1200	6,00,000
5 th	500	2,50,000
Total	5300	26,50,000

Land Use:

Type of land use	Present Land Use (In Ha)	At the end of Plan Period (In Ha)	At the end of life of mines (In Ha)
Quarry	0	0.313	0.313
Road	0.006	0.00	0.00
Safety Zone	0	0.034	0.034
Total Area in used	0.006	0.347	0.347
Balance unused Area	0.341	0.00	0.00
Total Applied Area	0.347	0.347	0.347

Protection Measures for Post Mine Closure Action Plan

The mine site will be properly fenced properly. A board of Do Not Enter, Only Authorized Access will be fixed near the water reservoir area and at the gate of the mine site.

1. A warning sign board will be erected at the site giving general information about the hazards at the site.
2. The periphery of the water reservoir pit will be secured by constructing a parapet wall or gabion walls.
3. Plantation is also proposed at the backfilled area along with around the benches.

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	LOCATION	Area (Ha.)	No. of Trees
1	Safety Zone	0.034	85
	Total	0.034	85

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

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Environment Monitoring Plan after Environment Clearance (EC)

Environment monitoring will be done Twice in year covering the AAQ (PM10, PM2.5, NOX & SO2)

Environment Management Plan (EMP)	Capital Cost (INR)	Recurring Cost (INR/Year)
Water Tanker for Dust Suppression	0.00	2,00,000.00
Plantation in Safety Zone	49,500.00	8,250.00
Compliance and Monitoring	0.00	50,000.00
Total	49,500.00	2,58,250.00

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be used for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha' road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask etc. shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
- m. No mining operation has been carried out on the proposed site till date.

Risk & Hazards Management

Risk Assessment

It is a small manual mining by tractor & haulage. No major risk is anticipated.

Some anticipated risks are briefed below;

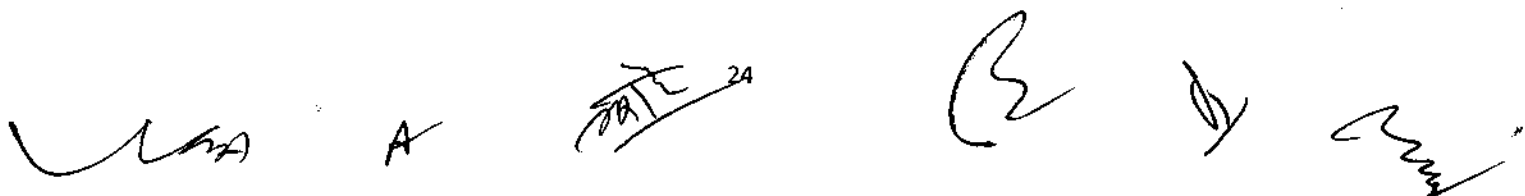
Minor Injuries

In Course of project activities during excavation of soil and its loading into tractor. There might be some minor personal injury.

Road Accident

In course of haulage of soil to Brick kiln by tractor, road accident may happen.

Disaster Management Plan

The bottom of the page features several handwritten signatures and initials in black ink. From left to right, there is a large, stylized signature, a single letter 'A', a signature that appears to be 'JATE' with the number '24' next to it, a large, bold letter 'B', a signature that looks like 'D', and a final, more elaborate signature on the far right.

i) Road Safety

Tractor driven will be instructed to ensure that speed of tractor on public road should be restricted to 15 KMPH.

Haulage road would be repaired & maintained regularly.

ii) An information centre would be maintained at office with telephone contact no. of local police station and hospital. In case of a road accident, police will be informed and arrangements would be made for medical aid to injured person.

iii) Arrangement for first aid to minor injuries to personnel working in the mine would be made in Temporary office.

Top Soil Management

During quarry development an amount of 641 cum of fertile top-soil will be generated and this produced top-soil will be preserved temporarily by dumping. This preserved top-soil will be spread concurrently over the excavated part of the land after the end of each year production of brick soil and grass cultivation will be done on it.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Brick Soil Mining for M/s Ranjana Bricks, Village : Jogyara, Thana : Kisko, Thana no. : 89, Distt. : Lohardaga, Jharkhand (0.347 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II alongwith the following specific condition :-

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

4. Lolo Stone Mine of M/s Fairmine Resources Limited, Mouza : Lolo, Block : Ramgarh, Distt.: Ramgarh, Jharkhand (6.07 Ha).

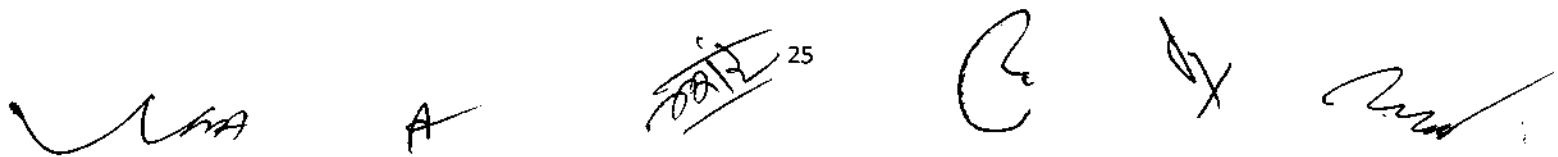
(Proposal no.: SIA/JH/MIN/488797/2024)

Name of the consultant : Crystal Consultants, Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 24.07.2024.

Project Category : B1 – 1(a) Mining of Minerals : Application for Environmental Clearance (EC) as per EIA notification, 2006.

EC Application for: Boulder Stone: 360872 Tonne Per Annum (TPA)

 25

Waste: NA

DG Set: YES

Crusher- YES

ToR for the project was issued by MoEF&CC, Govt. of India vide letter no. F.No. J-11015/46/2020-IA-II(M), dated 12.11.2020. The final EIA / EMP submitted by PP to SEAC, Jharkhand on 22.07.2024.

Brief History of Proposal :

TIMELINE	
Date	Event
11-07-2019	E-Auction Conducted for Lolo Stone Mine (6.07Ha.)
06-08-2019	M/s Fairmine Resources Ltd. (FRL) Ranchi was declared as the 'Preferred Bidder' for Lolo Stone Block-(06.07 Hectare) and obtained Letter of Intent (LOI) from Department of Mines and Geology, Government of Jharkhand
10-08-2020	Approved Mining Plan by Additional Director, Mines Ranchi vide Memo No. 135 Dated: 10/08/2020
17-09-2020	Applied for Terms of Reference (TOR) on PARIVESH 1.0 Portal
	Proposal No.: IA/JH/MIN/173744/2020
	File No.: J-11015/46/2020-IA-II(M)
06-10-2020	Query for Shortcoming by MS
	<i>Pl. provide following documents; 1. Complete approved mining plan. 2. Valid mining lease document.</i>
07-10-2020	Resubmission of Proposal by Proponent with all required documents.
08-10-2020	Accepted by MS
26-10-2020	Proposal considered by EAC
06-11-2020	Minutes uploaded on PORTAL
12-11-2020	Terms of Reference (TOR) granted by Expert Appraisal Committee (Non-Coal) Vide its Letter No. : J-11015/46/2020-IA-II(M) & Dated : 12/11/2020
01/10/2020 to 31/12/2020	Period of Baseline Environment Data
10-04-2021	Public Hearing
02-10-2021	Applied for Environment Clearance (EC) on PARIVESH 1.0 Portal
	Proposal No.: IA/JH/MIN/173744/2020
	File No.: J-11015/46/2020-IA-II(M)
07-10-2021	Query for Shortcoming by MS
	<i>The mine lease area is 6.07 Ha. As per your form on Parivesh no general condltion apply. This is category B project. Pl. approach to SEIAA, Jharkhand.</i>
16-10-2021	Resubmission of Proposal by Proponent
	<i>The project attracts the General Condition as it is located in a severely polluted area. During the form submission on Parivesh, the "NO" option was mistakenly selected for the General Condition Apply section. This was corrected during the reply to the Essential Details Sought (EDS).</i>

16-10-2021	Accepted by MS
The Proposal was then considered in EAC (Non-Coal) for 4 times. Details furnished as under: -	
Proposal considered by EAC	Meeting No.
16/11/2021 to 16/11/2021	<u>41</u>
25/01/2022 to 25/01/2022	<u>45</u>
19/04/2022 to 19/04/2022	<u>49</u>
27/12/2022 to 28/12/2022	<u>8</u>
TIMELINE	

Date	Event		
10-11-2022	JSPCB submit an Action Plan for Severally Polluted Area as per CEPI to CPCB for Ramgarh District		
Date	Details	Date	Details
26-11-2021	Deferred	27-12-2021	<u>Reply by Proponent</u>
07-02-2022	Deferred	31-03-2022	<u>Reply by Proponent</u>
29-04-2022	Deferred	19-06-2022	<u>Reply by Proponent</u>
22-08-2022	The decision regarding consideration of deferred cases for minor mineral to be consider at the Central level or State level is pending at Ministry. The proposal may consider accordingly.	07-09-2022	<u>Reply by Proponent</u>
12-09-2022	The decision regarding consideration of deferred cases for all minor & major (less than 250 ha) mineral to be consider at the Central level or State level is pending at Ministry. The proposal may consider accordingly.	04-11-2022	<u>Reply by Proponent</u>

25-11-2022	Sir, The Project Proponent needs to submit the detailed note on data analysis, interpretation and environmental Impact of the one month baseline data. The Project Proponent needs to specifically address the environmental impacts as the project falls under critically polluted area as sought by the EAC. Action points w.r.t Ministry's sustainable mining guidelines, 2016 and 2020. Also, the Project Proponent needs to submit the status of the approval of District Survey Report (DSR) by SEIAA w.r.t judgment of the Hon'ble Supreme Court Order and Ministry's notification of 2018.	03-12-2022	<u>Reply by Proponent</u>
05-01-2023	Deferred	11-03-2023	<u>Reply by Proponent</u>
31-03-2023	Sir, The Project Proponent is requested to submit the District Survey Report approved by the SEIAA as per Ministry's Notification S.O.3611(E) dated 25.07.2018 and in accordance with the order of Hon'ble Supreme Court dated 10.11.2021 in Civil Appeal Nos. 3661-3662 of 2020 titled as State of Bihar V/s Pawan Kumar and ADS point no. (ii) regarding letter from the Dept. of Mines and Geology clarifying whether any illegal mining within the mine lease area has been carried out or not, and whether the same has been carried out by PP (M/s Fairmine Resources Limited) or not?	08-05-2023	<u>Reply by Proponent</u>
16-05-2023	Sir, The Project Proponent is requested to submit the District Survey Report approved by the SEIAA as per Ministry's Notification S.O.3611(E) dated 25.07.2018 and in accordance with the order of Hon'ble Supreme Court dated 10.11.2021 in Civil Appeal Nos. 3661-3662 of 2020 titled as State of Bihar V/s Pawan Kumar and ADS point no. (ii) regarding letter from the Dept. of Mines and Geology clarifying whether any illegal mining within the mine lease area has been carried out or not, and whether the same has been carried out by PP (M/s Fairmine Resources Limited) or not? as per the observation of EAC. The Project Proponent may kindly note that submission of incomplete information on Parivesh portal may lead to delist the proposal from the Parivesh portal.	14-06-2023	<u>Reply by Proponent</u>
19-07-2023	Sir, Incomplete information/documents received. Project proponent is requested to submit the District Survey Report (DSR) approved by the SEIAA as per the observations of EAC in its meeting held during 27-28 December,2022.	07-10-2023	<u>Reply by Proponent</u>
18-10-2023	Sir, The reply of project proponent vide letter dated 7th October,2023 is noted and submit complete information. Thanks.	30-12-2023	<u>Reply by Proponent</u>








25-01-2024	Sir, • The matter has been examined in the Ministry and it is noted that the approval of DSR is pending. Hence, the Project Proponent is requested to submit the District Survey Report (DSR) approved by the SEIAA as per the observations of EAC in its meeting held during 27-28 December, 2022.	11-04-2024	<u>Reply by Proponent</u>
Date	Event		
02/11/2023 to 07/04/2024	In this period due to absence of SEIAA, Jharkhand the approval of DSR (stone) for Ramgarh District was pending.		
08-04-2024	SEIAA/SEAC, Jharkhand has notified by Ministry of Environment, Forest and Climate Change, Govt. of India vide Notification No. SO No. 1641(E) dated 08.04.2024.		
18-04-2024	Transfer the proposal to State level stating that <i>"The proposal has been transferred from category A to category B. Now the proposal shall be examined by MS of SEIAA to ensure that required information has been submitted. An email will be sent for seeking additional information, if any. Once verified, an acceptance letter shall be issued to the project proponent."</i>		
	New Proposal No. SIA/JH/MIN/83155/2024 was provided to us.		
19-06-2024	JSEIAA has raised Essential Details Sought (EDS) through Parivesh 1.0		
10-07-2024	Ramgarh District Survey Report for Stone has been approved by JSEIAA.		
There was no option available on our dashboard in both PARIVESH 1.0 or 2.0 to reply to the EDS raised by SEIAA, JH. A ticket was raised on 24th June (TIC- 24011245). We have again raised a Ticket on 17th July 2024 Ticket ID - TIC-24012697 addressing the issue. We have been in constant touch with the NIC team of MoEF & CC, they have taken remote access to our account and tried to solve the problem on 1st July 2024 but the problem was not solved as this proposal was of PARVESH 1.0.			
The PARIVESH 2.0 monitoring team has issued a directive via email dated 19/07/2024 to apply afresh form for Environmental Clearance (EC) in PARIVESH 2.0 and submit it to SEIAA, Jharkhand along with all the required documents.			
19-07-2024	Proponent has applied to SEIAA, Jharkhand for Environment Clearance on PARIVESH 2.0 PORTAL		
	Proposal No.:SIA/JH/MIN/488797/2024		
	Single Window No.:SW/198228/2024		
	CAF No.:CAF/183187/2024		

Project and Location Details :

Sl	Parameter	Details
1	Project Name	: Lolo Stone Mine
2	Lessee:	: M/s Fairmine Resources Limited
3	Lease Address	: VILLAGE: LOLO, TEHSIL : RAMGARH, DISTRICT: RAMGARH, STATE: JHARKHAND
4	Lease Area	: 6.07 Hectare Acres: 15.0 Acres
5	Type of Land	: Non-Forest – Raiyati Land
6	Project Cost	: Rs. 4.7645 Cr.
7	EMP Budget	: Capital: Rs. 59.50 Lakhs Recurring: Rs. 20.00 Lakhs
8	CSR / CER Budget	: Rs. 9.53Lakhs
9	New or Expansion	: New Project
10	Mineable Reserves	: Cu.M: 962374 Cu. M. Tonnes: 2550291 Tonnes
11	Mine Life	: 10 Years
12	Man power	: 39
13	Water Requirement	: 16.5 KLD (Potable: 1.5 KLD, Dust Suppression: 10 KLD, Green Belt: 5.0 KLD)
14	Water Source	: Water for potable purpose would be sourced from Public Water Supply System (Authorised Local Body). Water for dust suppression would be sourced from water storage created by provision of check Dam across natural low order drainage channel.
15	DG Set / power	: YES (500 KVA)
16	Crusher	: YES (250 TPH)
17	Nearest Water Body	: Damodar River which is 8 Km away from project site. Seasonal Nallah 100m away from project site
18	Nearest Habitation	: Lolo Village , 300 metres, Ramgarh – 8 km
19	Nearest Rail Station	: Mael Railway Station – 6.20 KM
20	Nearest Air Port	: Birsa Munda Airport, Ranchi 50 KM
21	Nearest Forest	: Protected forest on south side which is 1.5 Km away from project site.
22	Road & Highways	: NH- 33, at a distance of 3.50 KM

A

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B

C

CO-ORDINATES

1	Latitude	N23°33'33.64" to	N23°33'44.94"
2	Longitude	E85°33'53.51"	E85°34'03.40"

LAND DETAILS

Khata No.	Plot No.
184	2392 (P) 2402 (P), 2404, 2408 (P), 2410 (P), 2411 (P), 2412 (P)
55	2403
25	2405 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by Director, Mines, Deptt. of Mines & Geology, Govt. of Jharkhand vide letter no. Kha.Ni (Nilami)-02/2019/1852, dated 06.08.2019 and extension of validity of LoI issued by Director, Mines, Deptt. of Mines & Geology, Govt. of Jharkhand vide letter no. Kha.Ni (Nilami)-02/2019/1574/M, dated 20.07.2023.
2	CO	:	The CO, Ramgarh vide letter no. 905, dated 16.03.2021 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyani & Register II.
3	DMO	:	DMO, Ramgarh vide memo no. 918/Khanan, dated 28.10.2020 certified that 02 other mining lease area (3.23 Acre & 12.87 Acre) exists within 500 m radius from proposed project site and total area is 31.10 Acre.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribagh vide letter no. 2050, dated 23.09.2019 certified that the proposed project site is outside Eco Sensitive Zone of Hazaribag Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Ramgarh vide letter no. 2288, dated 04.09.2019 certified that the distance of reserved / protected forest land is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Ramgarh District (Sl. no. 07, Page no. 51).

7	Mine Plan Approval	:	Approved by Additional Director, Mines, Mines & Geology Deptt., Govt. of Jharkhand vide Memo No. 135/M, dated 10.08.2020.
8	Public Hearing	:	JSPCB, Regional Office –cum- Laboratory, Hazaribag vide letter no. 533, dated 16.04.2021 informed that Public Hearing conducted on 10.04.2021.
9	Qualified Person	:	Shri P.K. Sen was present in the meeting and affirmed that the mine plan has been prepared by him.

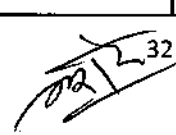
Working Details

1	Mining Method	:	Opencast (Mechanized)	
2	Quarry Area	:	5 years – 3.88 Ha	Life of Mine – 10 Years
3	Waste Generation	:	5 years– 0 Cu.M	
4	Stripping Ratio	:	-	
5	Working Days	:	300	
6	Bench: size & No	:	6m x 6m, 4 nos.	
7	Elevation of Mine	:	400 m AMSL	
8	Ground Level Elevation	:	384 m AMSL	
9	Ultimate Working Depth	:	376 m AMSL	
10	Water Table	:	363 m AMSL (Post Monsoon)	
11	Topography of Mine	:	Undulating	
12	Explosive Requirement	:	259 kg slurry explosive	
13	Diesel/Fuel requirement	:	(2500 Litres/day)	

Production Details

Year	Production of stone (Tonnes)	Production of soil in Cu.m	Intercalated waste in Cu.m
1 st Year	180526	0	0
2 nd Year	300298	0	0
3 rd Year	360760	0	0
4 th Year	360745	0	0








5th Year	360872	0	0
Total	1563201	0	0

Land Use

Particulars	Existing	Plan Period	Conceptual Period		
			Water body (In Ha)	Greenbelt (In Ha)	Public Use (In Ha)
Quarry	0.56	3.88	5.30	0	0
Plantation in Safety Zone	0	0.38	0	0.77	0
Road	0.02	0.01	0	0	0
Crusher	0	0.01	0	0	0
Balance area unused	5.49	1.79	0	0	0
Total	6.07	6.07	6.07		

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	LOCATION	Area/Length	No. of Trees
1	Safety Zone	: 0.38 Ha	606 trees
2	Other Reclaimed Area	: NIL	NIL
3	Haul /Approach Road	: 392 meter	624 trees on both sides of evacuation route.

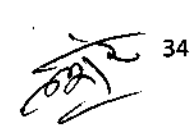
- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.
- The species to be used for plantation are mostly native species including Neem, Arjun, Kusum, Amla, Behra, Imli, Jamun & Aam. Some of them are medicinal & rest of them are fruit bearing. 5 Lakhs is Budgetary provision of greenbelt.

EMP BUDGET

Particulars	Capital Cost INR (Lakhs)	Recurring Cost INR (Lakhs)
Water sprinkler	10.00	5.00
Garland Drains Decantation pond Interception channel	5.00	
Rainwater Harvesting Structure	5.00	
Check Dam	10.00	
Green Belt	5.00	1.00
Dust Control Measures Crusher House	5.00	
Acoustic Screen in Crusher House	3.00	
Dust Control Measures for the Drill	1.97	
Culvert on the Nallah crossing the link road	5.00	
Socio Economic Development Schemes under CER	9.53	
Environment Monitoring	0.00	0.50
Road Maintenance	0.00	5.00
Annual Occupation Health Check – Up	0.00	2.50
Chemical for Dust Suppression	0.00	2.50
Miscellaneous	0.00	5.50
TOTAL	59.50	20.00
*Fund allocation to address the Public Hearing issues <i>Five Year Road Maintenance @Rs. 5.00 Lakhs per year : Rs. 25.00 Lakhs</i> <i>Socio – Economic Development under CER : Rs. 9.43 Lakhs</i> <i>Water Sprinkler @Rs. 5.00 Lakhs per year : Rs. 25.00 Lakhs</i> <i>Plantation Rs. 5.00 Lakh & per year Rs.1.00 Lakhs : Rs. 9.00 Lakhs</i> Total : 68.43 Lakhs	68.43	0.00
Grand Total	127.93	20.00

NOTE : The above mentioned fund to address the issues of public hearing already allocated under EMP Budget.








ACTION PLAN FOR PUBLIC HEARING

Name & Address	Concern About	PP Respond	AMT. Proposed	1 st Year	2 nd Year	3 rd Year	4 th Year	5 th Year
• Umesh Mahto, Lolo • Pradip Kumar Mahto, Lolo • Manoj Kumar Maho, Nyakhuti • Bharat Kumar, Budhakhuk hda	Movement of heavy vehicle and blasting will damage to their Building & local infrastructure	The proponent has drawn an action plan to deal with this problem It is proposed to provide speed breaker / ramblers along the evacuation route in stretch passing through populated area. A maximum speed limit of movement of heavy vehicle to 30 KMPH would be imposed. The practical measures that can be adopted to control ground vibration are: a) Reduce the maximum charge per delay by: Utilising the maximum number of delays Using in-hole decking with two or more delays Reducing the blast hole diameter Reducing the bench height b) Optimise the delay interval using a combination of field measurement and computer	25.00	5.00	5.00	5.00	5.00	5.00

		simulation using the linear regression analysis. d) Try different types of explosives or for the same type from different manufacturers. e) Wherever possible, ensure that the initiation sequence of blastholes progresses away from the structure. f) Optimise blast design parameters for a given site condition. g) Use special techniques like pre-splitting/trenching, only as a last resort. In extreme cases, where the vibration limits cannot be adhered to, non-explosive method of excavation may be considered. Rs. 5.00 per year allocated for road maintenance.						
- Ajay Mahto, Lolo - Nakul Mahto, Usra - Sunil Karmali, Dohakatu	People requested the proponent to take – up scheme for socio-economic development	The proponent also assured that local people will be given preference in offering job in the project. The proponent informed the	Rs. 9.53 Lakhs Under CER Schemes	4.53	5.00	--	--	--

	of the area and People also demanded that local people should be preferred for employment in the project.	congregation that a sum of Rs. 9.53 Lakhs has been provided for corporate environment responsibility. This budget will be utilized for implementing scheme for socio economic development of the area. The proponent will also sponsor to scheme namely a four cow dairy project and a bio composting plant in the village. This will offer a source of income for the villagers.						
- Arjun Mahot, Lolo - Rajo Devi. Lolo	People also expressed their apprehension on air pollution due to project activities & People also expressed their anxiety for loss of tree cover.	The impact of project activities on ambient air quality in the study area have been assessed. Appropriate air pollution mitigation measures have been suggested. They would be implemented in course of project operation,. Necessary fund for air pollution control has been provided. In order to ensure that pollution level remains within the prescribed limit regular air quality monitoring will be done. If required, corrective measures will be	Rs. 34.00 Lakhs Under EMP	10.00	6.00	6.00	6.00	6.00

		taken. A budget for Rs. 5 Lakhs per year has been provided to control dust generation from evacuation route on account movement of transport of Tippers. The capital cost for control of air pollutants has been provided in the EMP cost. In this project there is no forest land involved. Also there would be no loss of tree cover due to project activities. In addition it is proposed to raise green belt in safety zone having an area of 0.38 Ha. & also proposed on both sides of evacuation route (392 m). Rs. 5.00 Lakhs have been provided for this purpose.						
TOTAL			68.43	19.43	16.00	11.00	11.00	11.00

ACTION PLAN FOR SOCIO-ECONOMIC

Common Concern About	PP Respond	AMT. Proposed	1 st Year	2 nd Year	3 rd Year	4 th Year	5 th Year
Employment	<i>The proponent also assured that local people will be given preference in offering</i>	0.00	0.00	0.00	0.00	0.00	0.00








	<i>job in the project.</i>						
Water unavailability during non-monsoon for Agriculture	<i>To enhance water conservation and ensure availability during non-monsoon periods, we propose constructing a check dam on the seasonal nallah. A budget of Rs. 10.00 Lakhs is allocated for this initiative.</i>	10.00	5.00	5.00			

Environment Monitoring Plan after Environment Clearance (EC)

Environment monitoring will be done Twice in year covering the AAQ (PM10, PM2.5, NOX & SO2).

Solid Waste Management

The rock, granite gneiss, is hard and compact in nature, does not contain any intercalated waste The entire produced material (stone) will be used as boulders of different sizes for River Anti-erosion, Dam construction, embankment works etc. Therefore, it is concluded that the generation of waste will be nil in mining.

Water Quality Management

WATER QUALITY	
IMPACT	MITIGATION MEASURES
Mine Drainage	As per approved mining plan for the Project, the quarry would not intersect ground water table. As such quarry will not receive water during non-monsoon period. During the monsoon, quarry will receive water from sources as explained earlier. Following mitigation measures will be taken. ❖ Provide garland drain around quarry to collect surface run-off caused by rain in lease area on higher elevation. Water intercepted in these garland drains would collected surface run-off from upper area before it flows into mine pit & diverted to decantation pond. Treated water from decantation pond will overflow to natural drainage system. Decantation pond would be provided in safety zone. ❖ Water collected in quarry during monsoon season caused by precipitation over quarry area will be pumped out to facilitate safe mining. This water will also be diverted to decantation pond for removal of suspended solid. ❖ Sewage Treatment & Disposal Sewage will be generated in rest shelters provided for mine workmen. For treatment & disposal of this sewage, septic tank and cess pool will be provided. ❖ Catch Drain

	The Lease area has gradient towards NE – SW side. Surface run-off caused by rainfall in lease area will flow towards NE & SW side. This surface run-off may carry suspended solid collected from active mining area. In order that this surface run-off do not flow to properties contiguous to lease area, catch drain would be provided. Water collected in this catch drain would be diverted to decantation pond for facilitating sedimentation. Treated water will flow to natural drainage channel flowing by side of lease area on western & eastern side.

SURFACE WATER

No generation of waste water during non – monsoon season.

Sources of waste water during monsoon

- ✓ Mine water drainage
- ✓ Surface Run – off from active mining area.

IMPACT

Waste water generated will be treated in de-silting pond before discharge to natural drainage system impact on surface water would be insignificant.

GROUND WATER

There is no project related source for impacting ground water quality

Air Quality Management

AMBIENT AIR QUALITY	
IMPACT	MITIGATION MEASURES
Dust Control On Haul Road	Movement of haulage tippers on unpaved haul road within lease area is another source of dust generation. Application of water at frequent intervals is most practiced solution to dust control for haul road. Limitation of water alone has been found this it does not penetrate dust layer completely & flows out. Thus, dust control is poor by this method. CIMFR has carried out several field trials to improve efficiency of water for dust control. These field trial have identified a number of chemical which when added to water in a fixed ratio, improve the efficiency of water in controlling dust generation from haul road including frequency of sprinkling and volume of water per sprinkling. In addition to it these chemical are found to be bio- degradable. The project proponent would approach CIMFR for identification of appropriate chemical. Dust from haul road would be controlled by sprinkling water with identified chemical. DGMS vide its circular 8 of 97 also recommends additional of suitable chemical to water for improving efficacy to control dust generation. Haul road within quarry would be repaired & maintained regularly. Overloading of tippers carrying ROM Stone would be avoided. Plantation in safety zone.








Dust Control On Evacuation Route	The product stone would be evacuated by identified evacuation route using tipper. This route is ODR which is partly metaled and partly katcha, In order to minimize dust generation from this route following mitigation measures would be taken Only those tippers which have" pollution under control" certificate would be allowed to operate. Overloading of tippers would be strictly not permitted. All the tippers operating on public route would be covered by tarpaulin sheet. The speed limit of tippers on the evacuation route would be limited to 20 km/h. Suitable road sign would be provided along the route. Arrangement would be made for regular repair and maintenance of evacuation route. For this purpose a self help group (SHG) consisting of few villagers would be formed, they would be responsible for repair and maintenance of evacuation route. Required fund for this purpose would be made available to SHG by the proponent.

AMBIENT AIR QUALITY	
IMPACT	MITIGATION MEASURES
Dust Control In Crusher Cum Screening Plant	Broadly there are two methods for mitigation of dust generated in crushing cum screening plant . i.e. dry control and wet control system . Appropriate mitigation measures for this project has been selected on two consideration. Project site is located in an area where there is no perennial source for surface water . There is a good market for fine stone dust. Keeping above considerations in view it has been decided to provide wet type dust control system in screening plant. Elements of the proposed system would be Dust containment Enclosure with Hooding arrangements for dust containment enclosure would be provided at following to locations ❖ Crusher Discharge Area. ❖ Crusher to Belt. ❖ Transfer points ❖ Screens For controlling the generation of dust in crushing & screening plant we proposed to install wet dust suppression system.
Dust Control in Blasting Operation	(i) Controlled blasting would be practised that would reduce generation of dust. (ii) Quantity of explosives to be used for blasting would be optimised to reduce overcharging of blast holes that results into rise in quantity of dust generation during blasting. In addition to geometry of pattern of blast holes would be planned carefully to optimise use of explosives. (iii) Time of blasting – Blasting would be preferably done during noon time. This will facilitate good ventilation & dispersal of dust resulting into lower concentration of dust in ambient air. Blasting during cloudy days will be avoided.

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NOISE QUALITY	
IMPACT	MITIGATION MEASURES
<u>Sources of noise generation</u> ✓ Operation of Mining Activities ✓ Drilling ✓ Blasting ✓ Handling of Material ✓ Crushing and screening ✓ Transportation of Material Project related sources of noise are operation of mining equipments, handling equipments operation of crusher & screening plants, blasting & haulage of mineral. These sources are confined to lease area except the activity of haulage of processed minerals to consumers. The level of noise generated by operation of mining equipments varies from 85 – 110 dBA. These activities are confined to lease area. Haulage of minerals by truck will pass through a few villages. These trucks generate noise level that varies from 75 to 85 dBA. Present level of noise in study area has been observed to vary to from a maximum of 61 dBA to minimum of 47dBA. Thus, the impact of mining activities on noise level will only be marginal & noise level not to excused.	Project related sources of noise pollution & their impact have been discussed earlier in this chapter. Noise pollution mitigation measures to be implemented during operational phase of Project are described below. ❖ Sharp drill bits will be used for drilling. This will reduce noise generation during drilling. ❖ Charge weight per hole would not exceed kg/ hole. This will ensure that noise level generated due to blasting would be lower. ❖ Staggering manner of blasting would be done to reduce generation of noise. ❖ Controlled blasting would reduce noise produced within lease area. ❖ Earmuffs/ earplugs will be provided to workmen exposed to high noise zone in the mine. ❖ Proper maintenance, oiling greasing of mining & haulage equipments. ❖ Enclosure would be provided around crusher and screening plant with Iron sheet. This will mitigate noise pollution. ❖ 7.5 m wide thick green belt around safety zone would be provided. This will mitigate noise produced within lease area.

RISK ASSESSMENT

Risk Assessment & Disaster Management Plan

Opencast mining operations are exposed to number of hazards, which if not managed well may cause disaster like flooding, fire, machinery failure, explosion, mine pit failure etc. These

issues are required to be investigated in detail and addressed properly and disaster management plan has to be developed to deal with situation when disaster occur.

General Safety Measures.

To prevent disaster on account of above hazards following safety measures will be taken during operational phase of the mine.

- Mining operation will be strictly as per approved mining plan.
- All provisions of DGMS relating to safety will be strictly followed.
- All provisions relating to safety in Mines Act 1952, Metalliferous Mines regulations 1961 & other applicable rules will be followed.
- Proper, safe and careful handling & use of explosives by competent Blasters, having Blasters Certificate of competency issued by DGMS
- Before starting charging, clear audible warning signals by sirens will be given, so that people nearby can take shelter.
- Adequate number of portable fire extinguisher will be provided for control of fire, at adequate places.

Risk Identification & Mitigation Measures.

An opencast stone mining Projects are exposed to following risks.

- Mine Inundation.
- Accidents due to blasting.
- Failure of mine pit slopes.
- Accidents due to operation of HEMM.
- Fire.

Mine Inundation

During monsoon, mine pit will receive water due to precipitation over quarry area. This accumulation of water may flood the mine pit leading to inundation of working area. This may cause drowning of workmen & equipments. Particularly lower benches.

Mitigation Measure

There will be arrangement of continuous pumping of mine water. For this purpose, pump of adequate capacity along with pipe network will be provided.

Accident due to Blasting

Following measures will be taken to avoid accident due to blasting.

- (i) Avoid overcharging Blast holes.
- (ii) Control of movement of man & stray animals into safety zone round blasting zone.
- (iii) Sirens shall be provided which will be operated before start of blasting operation to warn all mine workmen

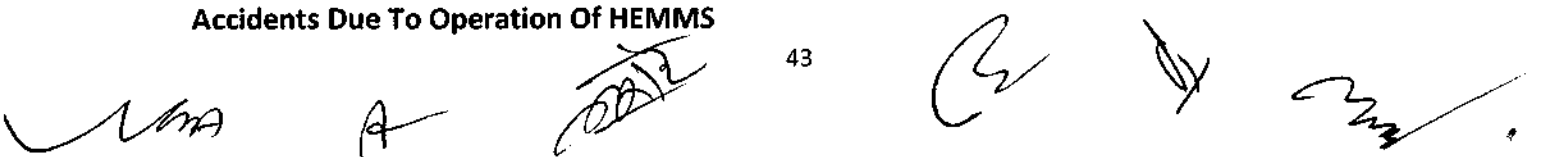
Mine Pit Slope Failure

Based on several studies conducted by CIMFER in stone deposits, following slopes are considered safe.

- Active benches will have a face slope of 70°.
- Overall pit slope 45°.
- Bench height will be limited to 9m.

With above provisions, danger of slope failure are is minimized.

Accidents Due To Operation Of HEMMS



Several HEMMS will be deployed to operate mine and haulage of materials. Operation of these HEMMS may cause accident. These accidents occur either due to mechanical failure or human error.

Following measures will be taken to minimize such accidents.

- All vehicles & equipment will be subjected to regular maintenance.
- Warning signs will be provided along route of movement to inform workmen of possible accidents.
- Proper training of operation/ drivers.

Disaster Management Plan

There may be occasion that disaster may happen in terms of industrial accidents, mine inundation. Such occurrence needs rapid response and attendance. Keeping this in view, a Disaster Management Plan has been prepared. Disaster Management Group will be formed with mines manager as head of this group with shift in charge as member. Line of command with clearly defined responsibility will be established. Shift in charge will be second in command.

(i) First Aid Centre.

A First Aid center shall be provided to give first aid to injured persons.

(ii) Control Room

A Control room would be established. This room would have communication system with telephone numbers of District Administration, Police, nearest Hospital, Ambulance services, District Disaster Management Centre. It will have a P.A. system with siren.

(iii) Emergency Preparedness Plan.

As soon as a disaster happens, the shift in charge will activate siren & inform workmen on shift duty to vacate the area of incidence and assemble at pre-determined place. All Project activities will be stopped.

- The shift in charge will inform the mines manager about the occurrence of disaster.
- Nearest identified hospital will be informed and ambulance would be requested.
- List of casualties will be prepared.
- District Authorities and Police will be informed.
- Relatives of affected persons will be informed.
- Mine owner will be informed.
- Affected person will be shifted to Hospital for needful medical assistance

Undertaking submitted affirming:

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

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

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Lolo Stone Mine of M/s Fairmine Resources Limited, Mouza : Lolo, Block : Ramgarh, Distt.: Ramgarh, Jharkhand (6.07 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with the following specific conditions :

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

photographs.

- VI. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

5. Pandu Sand Deposit (River bed of Bania) of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Pandu, Distt. : Khunti, Jharkhand (2.80 Ha).

(Proposal No : SIA/JH/MIN/ 471927/2024)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 24.07.2024.

Project Category : B2 – 1(a) Mining of Minerals : Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 31755 Cum/Annum 53031 TPA

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Pandu Sand Deposit (River Bed of Banai) of area 2.80 Ha. / 6.91 Acres
2	Lessee:	: M/s Jharkhand State Mineral Development Corporation Limited (A Govt. of Jharkhand Enterprises)
3	Lessee Address	: Khanij Nigam Bhawan, Doranda, Ranchi – 834002, Jharkhand.
4	Lease Area	: 2.80 ha. Acres- 6.91 Acres
5	Type of Land	: Non-Forest Government waste Land (River Bed)
6	Project Cost	: Rs. 60 Lakhs
7	EMP Budget	: Capital: 4.61 Lakhs Recurring: 3.97 Lakhs / year
8	New or Expansion	: New
9	Mineable Reserves for 1 st year & subsequent year 60% of Replenished quantity	: 31755 Cum/Annum or 53031 TPA (Dry Basis)

10	Mine Life	:	Life of Mine/Lease Period i.e 15.08.2025 as per provision of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.
11	Man power	:	16
12	Water Requirement	:	8.20 KLD (Drinking: 0.16 KLD, Dust Suppression: 5.88 KLD, Plantation: 2.16 KLD)
13	Water Source	:	From Nearby villages by tankers
14	DG Set / power	:	NA
15	Crusher	:	NA
16	Nearest Water Body	:	Project lies on Banai River.
17	Nearest Habitation	:	Pandu village, Approx. 680 meters towards NW direction.
18	Nearest Railway Station	:	Karra Railway Station, approx. 12.60 Km in NW direction.
19	Nearest Air Port	:	Birsa Munda Airport approx. 30.12 km towards North direction.
20	Nearest Forest	:	Open Scrub, Approx. 2.70 Km in ESE direction from mining lease.
21	Road & Highways	:	NH-143D, Approx. 0.77 Km in East direction from mining lease.

CO-ORDINATES

1	Latitude	From 23°02'55.8400" N	To 23°03'03.1078" N
2	Longitude	From 85°13'40.5065" E	To 85°13'54.8793" E

LAND DETAILS

Khata no.	Plot no.
110	1683 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Auction letter has been issued by Joint Secretary, Mines & Geology Deptt., Govt. of Jharkhand vide letter no. Kha.ni.-(Vividh)-117/2017-2090/M, dated 30.09.2022. According to provisions in Jharkhand State sand Mining Policy and its amendment. JSMDCLtd. has been nominated as nodal agency for operating sand mines in category II.
2	CO	:	The CO, Murhu (Khunti) vide letter no. 1013 (ii)/Ra., dated 30.12.2022 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.

3	DMO	:	DMO, Khunti vide memo no. 339/M, dated 27.04.2024 certified that no other balughat exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Ranchi vide letter no. 169, dated 04.03.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Khunti Forest Division vide letter no. 115, dated 19.01.2023 certified that the distance of forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Khunti district (Page No. – 74)
7	Gram Sabha	:	BDO, Murhu vide letter no. 633 (ii), dated 06.05.2024 informed that Gram Sabha conducted on 06.05.2024.
8	Mine Plan Approval	:	Approved by Assistant Mining Officer –cum- District Mining Officer, Khunti vide Memo No. 275/M, dated 05.04.2024.
9	Qualified Person	:	Shri Vidya Bhushan Mishra was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Manual Method
2	Quarry Area	:	2.80 ha. or 6.91 Acres
			Mine life / Lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.
3	Waste Generation	:	00 cum, as it is sand mining project.
4	Stripping Ratio	:	0:0
5	Working Days	:	200 Days
6	Bench: size & No	:	Bench height – 1.5 m & Bench width - 20.0 m.
7	Elevation of Mine	:	583 mRL to 587mRL. (maximum 1.5 m)
8	Ground Level Elevation	:	583 mRL
9	Ultimate Working Depth	:	1.5 m
10	Water Table	:	NA
11	Topography of Mine	:	Area lying in river plain.

12	Explosive Requirement	:	None. No blasting required.
13	Diesel/Fuel requirement	:	Not required for mining.

Production Details

Year	Thickness (m)	Average Replenishment Rate	Production of sand (Cum)	Production of sand –MT	Bench RL in Meters
1 st	1.5	100%	31755	53031	NA

The Development Plan submitted along with the mine plan relates to mining operation during the first year.

Land Use

Type of Land	Area in (ha)
Forest Land	Nil
Govt. waste land (River)	2.80
Residential area	Nil
Company land	Nil
Private Land	Nil
Total	2.80

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Plantation along both sides of approach road	980m	980
3	No. of Plants distributed with consultation local authorities/ village Panchayat	--	100

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be

undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Plan

Sl. No	Description	Capital Cost (lakh)	Recurring Cost (lakh)
1	Pollution Control & Dust Suppression	Nil	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	14,000 8,000 8,000 7,000
3	Plantation	10,30,000	1,00,000
4	Construction and maintenance of haul road	2,45,000	60,000
TOTAL		12,75,000	3,97,000

Environment Monitoring Programme

S. No.	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Undertaking submitted affirming:

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








- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- k. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
- l. Transportation from the river bed to the NH-143D will be done using the existing road.
- m. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.
- n. Wet sand will not be transported.

Solid Waste Management

No solid waste is generated during the course of mining.

Water Quality Management

A. Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.

B. Sewage from rest shelter would be treated in Septic Tank soak pit.

C. There is no other source for generation or discharge of trade effluent.

Air Quality Management

Sand will be mined manually. No mining equipment would be needed. However, diesel operated tippers/tractors would be used for transportation of sand from mine to stockyard.

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

II. **Loading of Product on tippers** – Water will be sprinkled on blasted Sand mass before they are loaded to trucks for transport.

III. **Movement of tippers on Road** – Movement of tippers on road generate dust. For mitigation of this pollution following measures will be taken

- Regular water sprinkling on Haul road by using water tankers.
- Regular repair of Haul road
- All Trucks carrying Sand outside lease area will have PUC certificate.
- Transport tippers/traders moving on public road will be covered with tarpaulin.

RISK ASSOCIATED WITH PROJECT ACTIVITIES AND THEIR MITIGATION MEASURES ARE DISCUSSED BELOW:

Road accidents

Transportation of sand along the public road may cause accident which may cause injury.

Preventive Measures;

1. Ensure speed limit for the haulage vehicle for 40 KMPH.
2. Regular maintenance of haulage road
3. Appropriate navigational signs informing sensitive area like school and habitation
4. Regular maintenance of the vehicles.

Dust generation

- No drilling involved
- Dust mass would be supplied to workers.
- Regular sprinkling of water on road

Noise Generation

Source of noise pollution in the project would be movement of tippers / tractors transporting sand from mine to stock yard. In general tippers / tractors produce a noise level of 75 – 90 (A) measured at distance of 3m from the source.

Preventive measures

- Transportation activities would be confined during day time only.
- There would be a speed limit of 40 kmph for tippers. Higher is speed higher is noise.
- Regular repair and maintenance of tippers/tractors.
- Plantation on both sides of haulage road.
- Tippers having PUC certified will be allowed to be used for sand transportation.

Health Hazards

During digging and handling of sand i.e. loading, transportation and unloading of sand, workmen would be exposed to inhalation of fine dust particles. This poses a health hazard.

Measures

Following mitigation measures would be taken to minimize this impact on health

- Regular water sprinkling on haulage roads
- Tree plantation on both sides of haulage road
- Tippers / Tractors carrying sand would be covered
- Mask would be provided to workmen employed for digging, loading, transportation and unloading activities

Accident at Site

This is a project with only source of accident at site would be movement of tippers /tractors within mine site for transportation of sand.

Preventive measures

Following mitigation measures would be taken to minimize risk of road accident:

- Separate alignment for movement of loaded vehicles coming out of mine site
- Ensure speed restriction of 10 KMPH within mine site for incoming and outgoing tippers
- Regular maintenance and repair of haulage vehicles employed for sand transportation
- No overtaking of transportation vehicles within mine site
- Proper maintenance of haulage roads

Transportation

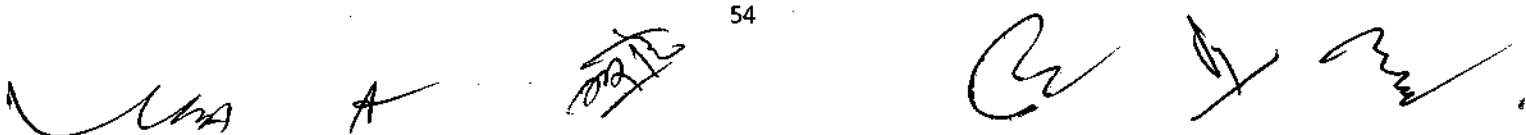
The usual method of transporting minerals from the working face is by tractor. Large earth moving equipment's are not used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid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

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

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Pandu Sand Deposit (River bed of Bania) of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Pandu, Distt. : Khunti, Jharkhand (2.80 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II alongwith the following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- II. The Environmental Clearance granted for lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.
- III. Replenishment study shall be conducted during pre-monsoon and post monsoon every year and study report have to be submitted to SEIAA / SEAC, Jharkhand. The production shall be restricted to 60% of the replenished quantity or the proposed quantity in the mine plan, which ever is less.

- IV. Suitable plant species of not less than 2 M height to be planted in area equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- V. Dedicated water tanker to be provided for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- VI. Pre-employment Occupational health checkup for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests. Summary findings of same to be submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted within 6 monthly compliance report with Geo-Tagged photographs.
- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted within 6 monthly compliance report.
- IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.
- X. Project Authority will ensure that personal protective equipments such as protective clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel's.
- XI. River Sand Mining shall not be done in rainy Season (mid June to mid October of each calendar year).
- XII. Dept. of Mines & Geology, Govt. of Jharkhand shall keep a strict vigil in the compliance of relevant provisions of applicable Jharkhand Minerals (Prevention of illegal mining, Transportation and Storage) Rule 2017 and its amendment especially scientific execution of mining plan (as approved by them themselves) and report violations if any is found as well as action taken for the same.
- XIII. Project Proponent shall submit (to the SEIAA, Jharkhand, Regional Office of MoEF&CC at Ranchi, Jharkhand State Pollution Control Board) six monthly compliance report with evidence of the conditions within a fortnight after the end of every six month till validity period of Environmental Clearance.
- XIV. The project proponent before starting any activity / preparation of ground, on the leased area shall demarcate his lease hold by RCC pillars erected at the cost of lease holder after certification of the mining officer. On each pillar Geo-Coordinate and fore bearing / back bearing shall be written with permanent paint mark as described in the mining plan. All the pillars should remain intact at same geo-coordinate. Establishment / labeling of Benchmark at each pillars or ground control points.
- XV. Extraction of sand beyond annual production capacity is not permitted.
- XVI. The Project Proponent should undertake the sand mining limited to 03 meter (three meter) depth by exclusively manual method.
- XVII. The stacking area of mined-out sand which shall be situated near the mining site within a fenced area from all sides to avoid being spread in the nearby areas by high winds and the height of stacking should not exceed 2 meter. Transportation shall be



confined to day time only that is from sunrise to sunset, to avoid inconvenience to local population in any manner.

- XVIII. Mining activity shall not be done for mine lease where mining can cause danger to site of flood protection works, places of cultural, religious, historical and archaeological importance.
- XIX. Project Proponent shall submit the annual replenishment report certified by an authorized agency.
- XX. No labour camp shall be allowed in riverbed.
- XXI. Provision shall be made for housing labour with all necessary infrastructure and facilities (outside mining Block and river-bed) such as fuel for cooking, toilets / mobile toilets, safe drinking water, First-Aid facilities, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
- XXII. Labour & Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers shall be undertaken periodically to observe any adverse health impact due to exposure to dust and take corrective measures, if needed.
- XXIII. The Project Proponent shall make arrangements for safe drinking water, first aid facility along with anti-venom injection, in case of emergency for the workers.
- XXIV. Sand and gravel may be extracted across the entire active channel during the dry season.
- XXV. Abandoned stream channels on the terrace and inactive floodplains be preferred rather than active channels and their deltas and flood plains. The stream should not be diverted to form the inactive channel.
- XXVI. Layers of sand and gravel which could be removed from the river bed shall depend on the width of the river and replenishment rate of the river.
- XXVII. Sand and gravel shall not be allowed to be extracted where erosion may occur, such as at the concave bank.
- XXVIII. Sand and gravel shall not be extracted up to a distance of 1 kilo meter (1 km.) from major bridges and highways on both sides, of five times (5x) of the span (x) of a bridge / public civil structure (including water intake points) on up-stream side and ten times (10x) the span of such bridge on down-stream side, subjected to a minimum of 250 meters on the upstream side and 500 meters on the downstream side.
- XXIX. Sand and gravel could be extracted from the downstream of the sand bar at river bends.
- XXX. Mining depth should be restricted to 3 meters and distance from the band should be $1/4^{\text{th}}$ of river width and should not be less than 7.5 meters.
- XXXI. A buffer distance / unmined block of 50 meters after every block of 1000 meters over which mining is undertaken or at such distance as may be the directed / prescribed by the regulatory authority shall be maintained.
- XXXII. River bed sand mining shall be restricted within the central $3/4^{\text{th}}$ width of the river/rivulet of 7.5 meters (inward) from river banks but up to 10% of the width of the river, as the case may be. Regulating authority while regulating the zone of river bed

mining shall ensure that the objective to minimize the effects of riverbank erosion and consequential channel migration are achieved to the extent possible. In general, the area for removal of minerals shall not exceed 60% of the mine lease area, and any deviation of relaxation in this regard shall be adequately supported by the scientific report.

6. Koreyamohanpal Sand Ghat of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Koreyamohanpal, Thana : Ghatshila, Distt. : East Singhbhum, Jharkhand (34.70 Ha).

(Proposal No : SIA/JH/MIN/ 488965/2024)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 24.07.2024.

Project Category : B1 – 1(a) Mining of Minerals : Application for Terms of Reference (ToR) as per EIA notification, 2006.

EC Application for: Proposed Capacity- 208200 cum per annum or 545484 TPA

Project and Location Details :

Sl	Parameter	Details
1	Project Name	: Koreyamohanpal Sand Ghat (In The River Bed of Subarnarekha)
2	Lessee	: M/s Jharkhand State Mineral Development Corporation Limited
3	Lessee Address	: Khanij Nigam Bhawan, Doranda, Ranchi – 834002, Jharkhand.
4	Lease Area	: 34.70 ha. Acres- 85.744 Acres
5	Type of Land	: Govt. non forest (river) land
6	Project Cost	: Rs. 250 Lakhs
7	EMP Budget	: Capital: 2.80 lakh Recurring: 4.80 Lakh
8	New or Expansion	: New
9	Mineable Reserves for 1 st year & subsequent year 60% of Replenished quantity	: 208200 cum or 545484 tonnes (Dry Basis)
10	Mine Life	: Mine life / Lease period i.e. 15.08.2025 as per provisions of

			Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.
11	Man power	:	65
12	Water Requirement	:	5.41 ~ 5.40 KLD (Drinking: 0.65 KLD, Dust Suppression: 3.36 KLD, Plantation: 1.40 KLD)
13	Water Source	:	From Nearby villages by tankers
14	DG Set / power	:	NA
15	Crusher	:	NA
16	Nearest Water Body	:	Project lies on Subarnarekha River.
17	Nearest Habitation	:	Punashya Village Approx 0.64 km towards West direction.
18	Nearest Rail Station	:	Chakulia Railway Station approx. 22.50 Km in NNE direction.
19	Nearest Airport	:	Birsa Munda Airport approx. 178.80 km towards NW direction.
20	Nearest Forest	:	Open mixed Jungle Approx. 6.80 Km in NE direction from mining lease. Open sal Jungle Approx. 3.80 Km in SE direction from mining lease. Open jungle mainly sal Approx. 6.50 Km in NW direction from mining lease.
21	Road & Highways	:	NH-18 Approx. 5.30 Km in East direction from mining lease.

CO-ORDINATES

1	Latitude	From 22° 16' 57.89" N	To 22° 16' 29.89" N
2	Longitude	From 86° 39' 42.00" E	To 86° 39' 47.36" E

LAND DETAILS

Plot no.
27 (P) & 72 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Auction letter has been issued by Joint Secretary, Mines & Geology Deptt., Govt. of Jharkhand vide letter no. Kha.ni.-(Vividh)-117/2017-2090/M, dated 30.09.2022. According to provisions in Jharkhand State sand Mining Policy and its amendment. JSMDCLtd. has been nominated as nodal agency for operating sand mines in category II.
2	CO	:	The CO, Gudabanda vide letter no. 83, dated 20.02.2023 has mentioned the plot no. of the project is not recorded as "Jungle-

			Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, East Singhbhum, Jamshedpur vide memo no. 656/Khanan dated 22.07.2024 certified that 01 other balughat (46.30 Ha) exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Dalma Elephant Project vide letter no. 117, dated 16.01.2023 certified that the proposed project site is outside Eco Sensitive Zone of Dalma Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Jamshedpur Forest Division vide letter no. 124, dated 17.01.2023 certified that the distance of forest is 3800 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of East Singhbhum District (Sl. no. 09, Page no. 63).
7	Gram Sabha	:	BDO, Gudabanda vide letter no. 978, dated 20.10.2023 has certified that no population is residing in close proximity of the project.
8	Mine Plan Approval	:	Approved by District Mining Officer, East Singhbhum, Jamshedpur vide Memo No. 533/Khanan, dated 20.06.2024.
9	Qualified Person	:	Shri P.K. Sen was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast manual Method
2	Quarry Area	:	34.70 Ha. or 85.744 Acres
			Life of Mine – Lease Period i.e 15/08/2025 as per provisions of Jharkhand State Sand Mining Policy 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.
3	Waste Generation	:	NA, as it is sand mining project.
4	Stripping Ratio	:	0:0
5	Working Days	:	200 Days
6	Bench: size & No	:	Bench height – 2.0 m & Bench width - 20.0 m.
7	Elevation of Mine	:	65 mRL to 64 mRL (maximum 2.0 m)
8	Ground Level Elevation	:	64 mRL
9	Ultimate Working Depth	:	1.0 m
10	Water Table	:	NA
11	Topography of Mine	:	Area lying in river plain.

12	Explosive Requirement	:	NA
13	Diesel/Fuel requirement	:	NA

Production Details

Year	Thickness (m)	Average Replenishment Rate	Production of sand(Cum)	Production of sand –MT
1st	1	100	208200	545484

The Development Plan submitted along with the mine plan relates to mining operation during the first year

Land Use

Type of Land	Area in (ha)
Forest Land	Nil
Govt. waste land (River)	34.70
Residential area	Nil
Company land	Nil
Private Land	Nil
Total	34.70

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Plantation along both sides of approach road	560 m	560
2	No. of Plants distributed with consultation local authorities/ village Panchayat	-	140

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (lakh)	Recurring Cost (lakh)
1	Pollution Control & Dust Suppression	Nil	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	50,000 40,000 20,000 10,000
3	Plantation	1,40,000	1,00,000

4	Construction and maintenance of haul road	1,40,000	60,000
TOTAL		2,80,000	4,80,000

Note: *700plants * 200 Rs (for each plants including hedges and fences) = 1.40 lakh

Salary of Labor for haul road maintenance 1 labor*300 = 300 per day

300* 200 = 60,000/-

*** 2.5 lakh per kilometer (250000 * 0.56 km haul road = 1,40,000/-)**

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

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

Solid Waste Management

No solid waste is generated during the course of mining.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Sewage from rest shelter would be treated in Septic Tank soak pit.
- There is no other source for generation or discharge of trade effluent.

Air Quality Management

Sand will be mined manually. No mining equipment would be needed. However, diesel operated tippers/tractors would be used for transportation of sand from mine to stockyard.

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

II. Loading of Product on tippers – Water will be sprinkled on blasted Sand mass before they are loaded to trucks for transport.

III. Movement of tippers on Road – Movement of tippers on road generate dust. For mitigation of this pollution following measures will be taken

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

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- Transport tippers/traders moving on public road will be covered with tarpaulin.

RISK ASSOCIATED WITH PROJECT ACTIVITIES AND THEIR MITIGATION MEASURES ARE DISCUSSED BELOW:

Road accidents

Transportation of sand along the public road may cause accident which may cause injury.

Preventive Measures;

1. Ensure speed limit for the haulage vehicle for 40 KMPH.
2. Regular maintenance of haulage road
3. Appropriate navigational signs informing sensitive area like school and habitation
4. Regular maintenance of the vehicles.

Dust generation

- No drilling involved
- Dust mass would be supplied to workers.
- Regular sprinkling of water on road

Noise Generation

Source of noise pollution in the project would be movement of tippers / tractors transporting sand from mine to stock yard. In general tippers / tractors produce a noise level of 75 – 90 (A) measured at distance of 3m from the source.

Preventive measures

- Transportation activities would be confined during day time only.
- There would be a speed limit of 40 kmph for tippers. Higher is speed higher is noise.
- Regular repair and maintenance of tippers/tractors.
- Plantation on both sides of haulage road.
- Tippers having PUC certified will be allowed to be used for sand transportation.

Health Hazards

During digging and handling of sand i.e. loading, transportation and unloading of sand, workmen would be exposed to inhalation of fine dust particles. This poses a health hazard.

Measures

Following mitigation measures would be taken to minimize this impact on health

- Regular water sprinkling on haulage roads
- Tree plantation on both sides of haulage road
- Tippers / Tractors carrying sand would be covered
- Mask would be provided to workmen employed for digging, loading, transportation and unloading activities

Accident at Site

This is a project with only source of accident at site would be movement of tippers /tractors within mine site for transportation of sand.

Preventive measures

Following mitigation measures would be taken to minimize risk of road accident:

- Separate alignment for movement of loaded vehicles coming out of mine site
- Ensure speed restriction of 10 KMPH within mine site for incoming and outgoing tippers

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- Regular maintenance and repair of haulage vehicles employed for sand transportation
- No overtaking of transportation vehicles within mine site
- Proper maintenance of haulage roads

Transportation

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

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

Undertaking submitted affirming:

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








- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- k. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
- l. Mining will be restricted upto 3 meter.
- m. Transportation from the river bed will be done using the existing road.
- n. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.
- o. Wet sand will not be transported.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 23, 24, 25, 26 & 27.07.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III along with the following specific conditions as part of EIA / EMP report :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- II. Pre-monsoon data of current year is to be included in final EIA report.
- III. Satellite imagery with Geo-Cordinates of pre-monsoon (current year) to be included in the final EIA report.

7. Koreyamohanpal & Subarnarekha Sand Ghat of M/s Jharkhand State Mineral Development Corporation Limited (JSMDC Ltd.), Village : Koreyamohanpal, Thana : Ghatshila, Distt. : East Singhbhum, Jharkhand (46.30 Ha).

(Proposal No : SIA/JH/MIN/ 488956/2024)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 24.07.2024.

Project Category : B1 – 1(a) Mining of Minerals : Application for Terms of Reference (ToR) as per EIA notification, 2006.

EC Application for: Proposed Capacity- 138900 cum per annum or 362529 TPA

Project and Location Details :

Sl	Parameter	Details
1	Project Name	: Koreyamohanpal & Subarnarekha Sand Ghat (In The River Bed of Subarnarekha)
2	Lessee	: M/s Jharkhand State Mineral Development Corporation Limited
3	Lessee Address	: Khanij Nigam Bhawan, Doranda, Ranchi – 834002, Jharkhand.
4	Lease Area	: 46.30 ha. Acres- 114.41 Acres
5	Type of Land	: Govt. non forest (river) land
6	Project Cost	: Rs. 300 Lakhs
7	EMP Budget	: Capital: 5.45 lakh Recurring: 4.80 Lakh
8	New or Expansion	: New
9	Mineable Reserves for 1 st year & subsequent year 60% of Replenished quantity	: 138900 cum or 362529 tonnes (Dry Basis)
10	Mine Life	: Mine life / Lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.
11	Man power	: 49
12	Water Requirement	: 9.93 ~ 9.95 KLD (Drinking: 0.49 KLD, Dust Suppression: 6.84 KLD, Plantation: 2.60 KLD)
13	Water Source	: From Nearby villages by tankers
14	DG Set / power	: NA
15	Crusher	: NA
16	Nearest Water Body	: Project lies on Subarnarekha River.
17	Nearest Habitation	: Punashya Village Approx 0.62 km towards West direction.

18	Nearest Rail Station	:	Chakulia Railway Station approx. 21.60 Km in NNE direction.
19	Nearest Airport	:	Birsa Munda Airport approx. 178.0 km towards NW direction.
20	Nearest Forest	:	Open mixed Jungle Approx. 6.50 Km in NE direction from mining lease Open sal Jungle Approx. 6.0 Km in SW direction from mining lease. Open jungle mainly sal Approx. 6.20 Km in NW direction from mining lease
21	Road & Highways	:	NH-18 Approx. 4.80 Km in ENE direction from mining lease.

CO-ORDINATES

1	Latitude	From 22°17'35.37"N	To 86°39'19.51"E
2	Longitude	From 22°16'58.68"N	To 86°39'22.19"E

LAND DETAILS

Plot no.
27 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Auction letter has been issued by Joint Secretary, Mines & Geology Deptt., Govt. of Jharkhand vide letter no. Kha.ni.-(Vividh)-117/2017-2090/M, dated 30.09.2022. According to provisions in Jharkhand State sand Mining Policy and its amendment. JSMDC Ltd. has been nominated as nodal agency for operating sand mines in category II.
2	CO	:	The CO, Gudabanda vide letter no. 483/An., dated 13.10.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyani & Register II.
3	DMO	:	DMO, East Singhbhum, Jamshedpur vide memo no. 657/Khanan dated 22.07.2024 certified that 01 other balughat (34.07 Ha) exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Dalma Elephant Project vide letter no. 117, dated 16.01.2023 certified that the proposed project site is outside Eco Sensitive Zone of Dalma Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Jamshedpur Forest Division vide letter no.

			124, dated 17.01.2023 certified that the distance of forest is 2100 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of East Singhbhum District (Sl. no. 08, Page no. 63).
7	Gram Sabha	:	BDO, Gudabanda vide letter no. 979, dated 20.10.2023 has certified that no population is residing in close proximity of the project.
8	Mine Plan Approval	:	Approved by District Mining Officer, East Singhbhum, Jamshedpur vide Memo No. 537/Khanan, dated 21.06.2024.
9	Qualified Person	:	Shri P.K. Sen was present in the meeting and affirmed that the mine plan has been prepared by him.

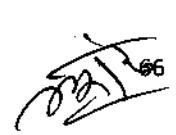
Working Details

1	Mining Method	:	Opencast manual Method
2	Quarry Area	:	46.30 Ha. or 114.41 Acres
			Life of Mine – Lease Period i.e 15/08/2025 as per provisions of Jharkhand State Sand Mining Policy 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.
3	Waste Generation	:	NA, as it is sand mining project.
4	Stripping Ratio	:	0:0
5	Working Days	:	200 Days
6	Bench: size & No	:	Bench height – 0.5 m & Bench width - 20.0 m.
7	Elevation of Mine	:	65 mRL to 64 mRL
8	Ground Level Elevation	:	64 mRL
9	Ultimate Working Depth	:	0.5 m
10	Water Table	:	NA
11	Topography of Mine	:	Area lying in river plain.
12	Explosive Requirement	:	NA
13	Diesel/Fuel requirement	:	NA

Production Details

Year	Thickness (m)	Average Replenishment Rate	Production of sand(Cum)	Production of sand –MT







1st	0.5	100	138900	362529

The Development Plan submitted along with the mine plan relates to mining operation during the first year

Land Use

Type of Land	Area in (ha)
Forest Land	Nil
Govt. waste land (River)	46.30
Residential area	Nil
Company land	Nil
Private Land	Nil
Total	46.30

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Plantation along both sides of approach road	1140 m	1140
2	No. of Plants distributed with consultation local authorities/ village Panchayat	-	160

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (lakh)	Recurring Cost (lakh)
1	Pollution Control & Dust Suppression	Nil	2,00,000
2	Baseline Monitoring	--	
	i) Air		50,000
	ii) Water		40,000
	iii) Soil		20,000
	iv) Noise		10,000
3	Plantation	2,60,000	1,00,000
4	Construction and maintenance of haul road	2,85,000	60,000
TOTAL		5,45,000	4,80,000

Note: *1300plants * 200 Rs (for each plants including hedges and fences) = 2.60 lakh

Salary of Labor for haul road maintenance 1 labor*300 = 300 per day

300* 200 = 60,000/-

*** 2.5 lakh per kilometer (250000 * 1.14 km haul road = 2,85,000/-)**

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

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

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- k. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
- l. Mining will be restricted upto 3 meter

- p. Transportation from the river bed will be done using the existing road.
- q. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.
- r. Wet sand will not be transported.

Solid Waste Management

No solid waste is generated during the course of mining.

Water Quality Management

- A. Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- B. Sewage from rest shelter would be treated in Septic Tank soak pit.
- C. There is no other source for generation or discharge of trade effluent.

Air Quality Management

Sand will be mined manually. No mining equipment would be needed. However, diesel operated tippers/tractors would be used for transportation of sand from mine to stockyard.

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

II. Loading of Product on tippers – Water will be sprinkled on blasted Sand mass before they are loaded to trucks for transport.

III. Movement of tippers on Road – Movement of tippers on road generate dust. For mitigation of this pollution following measures will be taken

- Regular water sprinkling on Haul road by using water tankers.
- Regular repair of Haul road
- All Trucks carrying Sand outside lease area will have PUC certificate.
- Transport tippers/traders moving on public road will be covered with tarpaulin.

RISK ASSOCIATED WITH PROJECT ACTIVITIES AND THEIR MITIGATION MEASURES ARE DISCUSSED BELOW:

Road accidents

Transportation of sand along the public road may cause accident which may cause injury.

Preventive Measures;

1. Ensure speed limit for the haulage vehicle for 40 KMPH.
2. Regular maintenance of haulage road
3. Appropriate navigational signs informing sensitive area like school and habitation
4. Regular maintenance of the vehicles.

Dust generation

- No drilling involved
- Dust mask would be supplied to workers.
- Regular sprinkling of water on road

Noise Generation

Source of noise pollution in the project would be movement of tippers / tractors transporting sand from mine to stock yard. In general tippers / tractors produce a noise level of 75 – 90 (A) measured at distance of 3m from the source.

Preventive measures

- Transportation activities would be confined during day time only.
- There would be a speed limit of 40 kmph for tippers. Higher is speed higher is noise.
- Regular repair and maintenance of tippers/tractors.
- Plantation on both sides of haulage road.
- Tippers having PUC certified will be allowed to be used for sand transportation.

Health Hazards

During digging and handling of sand i.e. loading, transportation and unloading of sand, workmen would be exposed to inhalation of fine dust particles. This poses a health hazard.

Measures

Following mitigation measures would be taken to minimize this impact on health

- Regular water sprinkling on haulage roads
- Tree plantation on both sides of haulage road
- Tippers / Tractors carrying sand would be covered
- Mask would be provided to workmen employed for digging, loading, transportation and unloading activities

Accident at Site

This is a project with only source of accident at site would be movement of tippers /tractors within mine site for transportation of sand.

Preventive measures

Following mitigation measures would be taken to minimize risk of road accident:

- Separate alignment for movement of loaded vehicles coming out of mine site
- Ensure speed restriction of 10 KMPH within mine site for incoming and outgoing tippers
- Regular maintenance and repair of haulage vehicles employed for sand transportation
- No overtaking of transportation vehicles within mine site
- Proper maintenance of haulage roads

Transportation

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

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

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

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 23, 24, 25, 26 & 27.07.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith the following specific conditions as part of EIA / EMP report :

- In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- Pre-monsoon data of current year is to be included in final EIA report.
- Satellite imagery with Geo-Cordinates of pre-monsoon (current year) to be included in the final EIA report.

8. Banwar Stone Deposit of M/s Bhardwaj Stone Works (Prop. : Shri Ritesh Kumar Bhardwaj), Village : Banwar, Thana : Balumath, Distt.: Latehar, Jharkhand (0.66 Ha).

(Proposal no.: SIA/JH/MIN/487692/2024)

Name of the consultant : P & M SOLUTION, Noida, U.P.

This is a new project which has been taken for appraisal on 24.07.2024.

Project Category : B2 – 1(a) Mining of Minerals : Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 3252 cum/annum or 9105 TPA

Project and Location Details:

Sl	Parameter		Details
1	Project Name	:	Banwar Stone Deposit (Area- 0.66 ha. or 1.63 Acre)
2	Lessee:	:	M/s Bhardwaj Stone Works Prop - Sri Ritesh Kumar Bhardwaj At-Village- Banalat, P.O.- Chedra, Thana-Balumath, District- Latehar, State-Jharkhand

3	Lease Address	:	Mouja- Banwar, Thana- Balumath, District – Latehar, State- Jharkhand	
4	Lease Area	:	0.66ha.	Acres- 1.63 Acre
5	Type of Land	:	Non-Forest (Raiyati Land)	
6	Project Cost	:	Rs. 40 Lakhs	
7	EMP Budget	:	Capital: 11.15 Lakhs	Recurring: 4.27 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	31802 cum or 89046 tonnes	
10	Mine Life	:	10 years	
11	Man power	:	26	
12	Water Requirement	:	10.90 KLD(Drinking: 0.26 KLD, Dust Suppression: 7.08 KLD, Plantation: 3.56 KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	200 KVA	
15	Crusher	:	No Crusher	
16	Nearest Water Body	:	Daini River Approx. 0.34 km towards SE direction of mine site.	
17	Nearest Habitation	:	Kurloungavillage, Approx. 680 meters towards SE direction.	
18	Nearest Railway Station	:	Phulbasia Railway station, approx. 2.39 km towards WSW direction	
19	Nearest Air Port	:	Birsamunda Airport, Ranchi approx. 73.58 km towards SE direction	
20	Nearest Forest	:	Manatu Protected Forest Approx. 1.87 km towards NNW direction Banalat Protected Forest Approx. 2.52 km towards North direction Besra Protected Forest Approx. 3.86 km towards NW direction Protected Forest Approx. 1.34 km towards East direction Protected Forest Approx. 1.42 km towards SSE direction Banwar Protected Forest Approx. 1.86 km towards West direction Rahia Protected Forest Approx. 3.86 km towards West direction Barwadih Protected Forest Approx. 3.89 km towards WNW direction	
21	Road & Highways	:	SH-7, Approx. 9.30 km in East direction	

CO-ORDINATES

1	Latitude	:	From 23° 52'28.70031407" N	To 23° 52' 28.01379534" N
2	Longitude	:	From 84° 55' 51.34139290" E	To 84° 55' 52.08093516" E

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LAND DETAILS

Khata No.	10 (new) 08 (old)	11 (new) 37(old)
Plot No.	531 (new) 305(old)	532 (new) 322 (old)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (Loi) has been issued by District Mining Officer, Latehar vide letter no. 539/M, dated 20.06.2020.
2	CO	:	The CO, Bariatu vide letter no. 11, dated 21.01.2020 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyan.
3	DMO	:	DMO, Latehar vide memo no. 1120/M, dated 06.11.2023 certified that 02 other mining lease area (5.40 Acre & 5.27 Acre) exists within 500 m radius from proposed project site and total area is 12.3 Acre (4.95 Ha.).
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribagh vide letter no. 798, dated 09.05.2024 certified that the proposed project site is outside Eco Sensitive Zone of Lawalong Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Latehar vide letter no. 84, dated 21.01.2020 certified that the distance of reserved / protected forest land is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Latehar District (Sl. no. 02, Page no. 52).
7	Gram Sabha	:	Gram Sabha conducted on 17.10.2019.
8	Mine Plan Approval	:	Approved by District Mining Officer, Latehar vide Letter No. 1080/M, dated 26.10.2023.
9	Qualified Person	:	Shri P.K. Sen was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast mechanized method.
2	Quarry Area	:	0.66Ha /1.63 Acre Life of Mine – 10 Years
3	Waste Generation	:	850 cum
4	Stripping Ratio	:	1:0.10

5	Working Days	:	300
6	Benches: size & No	:	3m to 3.5m
7	Elevation of Mine	:	500 ASML to 503 ASML
8	Ground Level Elevation	:	500 ASML
9	Ultimate Working Depth	:	485 ASML
10	Water Table	:	476 ASML to 467 ASML
11	Topography of Mine	:	Area represents undulating topography.
12	Explosive Requirement	:	70kg/day
13	Diesel/Fuel requirement	:	70 litre/day

Production Details

Year	Removal of Gritty Soil		Intercalated waste in cum	Production of Stone		Bench (AMSL)
	in cum	in tones		in cum	in tones	
1st	287	431	170	3233	9052	503-497
2nd	246	369	168	3194	8943	503-497
3rd	150	225	172	3252	9105	497-491
4th	350	525	169	3202	8964	497-491
5th	360	540	171	3241	9076	491-485
Total	1393	2090	850	16122	45140	-

Land Use

Type of Land	Existing (Ha)	At the end of plan period (in ha)	At the end of Mine (in ha)	Conceptual stage (Ha)
Quarry	0.00	0.28	0.36	0.36 ha (water reservoir)
Greenbelt with safety Barrier	0.00	0.30	0.30	0.30
Road	0.01	0.00	0.00	0.0
Total Area in use	0.01	0.58	0.66	0.66
Balanced Area Unused	0.65	0.08	0.00	0.0
Lease area	0.66 Ha			

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.30/750	750
2	Along Approach Road	:	930m	930
3	No. of plants distributed with consultation local authorities / village Panchayat	:	--	100

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	14,000 8,000 8,000 7,000
3	Plantation	8,90,000	1,00,000
4	Construction and maintenance of haul road	2,25,000	90,000
TOTAL		11,15,000	4,27,000

*Note: * 1780 plants * 500 Rs (for each plants including hedges and fences) = 8.90 lakh*

*Salary of Labor for haul road maintenance 1 labor*300 =300 per day*

300 300 = 90000/-*

** 2.5 lakh per kilometer (250000 * 0.90 km haul road = 2,25,000/-)*

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

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

Solid Waste Management

Total 850 cum of Intercalated waste and 1393 cum of Gritty soil shall be generated during this plan period. The area is covered with a layer of gritty soil. During quarry development in 1st, 2nd, 3rd, 4th & 5th year gritty soil and intercalated waste will be removed and this soil & waste will be used in haul road dressing & plantation. In conceptual period removed gritty soil & intercalated waste will be used in haul road dressing & plantation

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Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

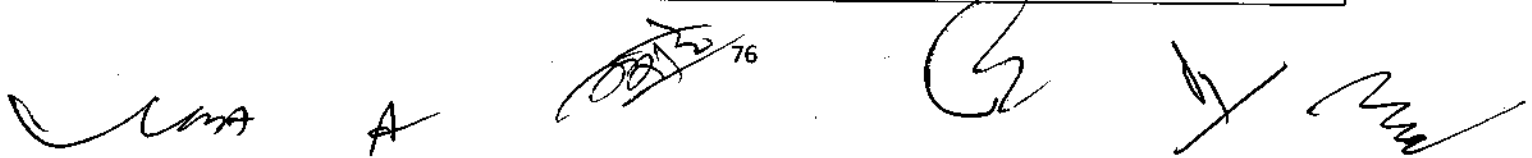
- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within



		last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

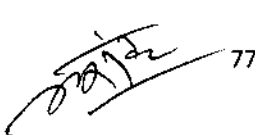
Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S.No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25








Hazard identification & Risk Analysis in Stone Mining operation

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

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

Preventive Measures:

Face Stability

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

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

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

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

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Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

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

Dust generation during drilling

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

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

Noise Generation during drilling

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

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

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

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

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

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

Handling of Explosives

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

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

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

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

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.

- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

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

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Banwar Stone Deposit of M/s Bhardwaj Stone Works (Prop. : Shri Ritesh Kumar Bhardwaj), Village : Banwar, Thana : Balumath, Distt.: Latehar, Jharkhand (0.66 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II alongwith the following specific conditions :

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

9. Loharsi Stone Deposit of Shri Bhaskar Kumar, Village : Loharsi, Thana : Chandwa, Distt.: Latehar, Jharkhand (1.116 Ha).

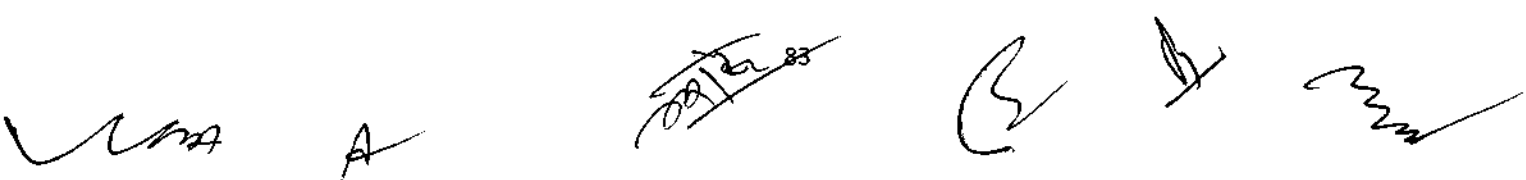
(Proposal no.: SIA/JH/MIN/487535/2024)

Name of the consultant : P & M SOLUTION, Noida, U.P.

This is a new project which has been taken for appraisal on 24.07.2024.

Project Category : B2 – 1(a) Mining of Minerals : Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 20712 cum/annum or 57993 TPA

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Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Loharsi Stone Deposit (Area- 1.116 ha. or 2.76 Acre)
2	Lessee:	: Sri Bhaskar Kumar S/o Sri Prahlad Kumar At Village- Jabra, P.O.- Barikhap, Thana-Balumath, District- Latehar, State-Jharkhand
3	Lease Address	: Village – Loharsi, Thana- Chandwa, District – Latehar, State- Jharkhand
4	Lease Area	: 1.116 Ha Acres- 2.76 Acres
5	Type of Land	: Non- Forest (Raiyati Land)
6	Project Cost	: Rs. 40 Lakhs
7	EMP Budget	: Capital: Rs. 9.525 Lakhs Recurring: Rs. 4.27 Lakhs/year
8	New or Expansion	: New
9	Mineable Reserves	: 94277.42 cum or 263034 tons
10	Mine Life	: 5 years (4 years 11 months)
11	Man power	: 28
12	Water Requirement	: 8.84 ~ 8.90 KLD, (Drinking: 0.28 KLD, Dust Suppression: 5.32 KLD, Plantation: 3.24 KLD)
13	Water Source	: From Nearby villages by tankers
14	DG Set / power	: 200 KVA
15	Crusher	: No Crusher
16	Nearest Water Body	: Damodar River, Approx. 2.65 km towards North direction of mine site Dhaugarha Nadi, Approx. 1.23 km towards East direction of mine site
17	Nearest Habitation	: Loharsi village, Approx. 840 meters towards NW direction.
18	Nearest Railway Station	: Mahuamilan Railway station, approx. 3.53 km towards NW direction
19	Nearest Air Port	: Birsa munda Airport, Ranchi approx. 62.95 km towards SE direction
20	Nearest Forest	: Deonadiya Protected Forest, Approx. 3.40 km towards North direction of mine site. Malhan Protected Forest, Approx. 2.58 km towards East direction of mine site Ganiyari Protected Forest, Approx. 2.10 km towards SW direction of mine site. Protected Forest, Approx. 1.85 km towards West direction of mine site Protected Forest, Approx. 2.23 km towards West direction of mine site. Torar Protected Forest, Approx. 4.42 km towards SSW direction of mine site

21	Road & Highways	:	NH-39, Approx. 5.17 km in WSW direction

CO-ORDINATES

1	Latitude	From 23°38'21.15946" N	To 23°38'26.32474" N
2	Longitude	From 84°49'00.85728" E	To 84°49'06.27902" E

LAND DETAILS

Khata no.	Plot no.
40	1863 & 1864 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Latehar vide letter no. 1213/M, dated 22.11.2023.
2	CO	:	The CO, Chandwa, Latehar vide letter no. 88, dated 07.02.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatyan & Register II.
3	DMO	:	DMO, Latehar vide memo no. 540/M, dated 05.07.2024 certified that 01 other mining lease area (5.26 Acre) exists within 500 m radius from proposed project site and total area is 8.02 Acre.
4	DFO Wild Life	:	Deputy Director, Palamau Tiger Project, North Division, Medininagar vide letter no. 79, dated 29.01.2024 certified that the proposed project site is outside Eco Sensitive Zone of Betla National Park & Palamau Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Latehar vide letter no. 2188, dated 06.12.2022 certified that the distance of reserved / protected forest land is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Latehar District (Sl. no. 03, Page no. 109 A).
7	Gram Sabha	:	BDO, Chandwa vide letter no. 1796, dated 26.11.2022 informed that Gram Sabha conducted on 25.11.2022.
8	Mine Plan Approval	:	Approved by Assistant Mining Officer –cum- Incharge District Mining Officer, Latehar vide Memo No. 539/M, dated 05.07.2024.
9	Qualified Person	:	Shri P.K. Sen was present in the meeting and affirmed that the mine plan has been prepared by him.

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Working Details

1	Mining Method	:	Opencast Mechanized Method	
2	Quarry Area	:	1.116 Ha / 2.76 Acres	Life of Mine – 5 years (4 years 11 months)
3	Waste Generation	:	3183 cum of Gritty soil and 4944 cum of Intercalated Waste generated during the plan period	
4	Stripping Ratio	:	1:0.05	
5	Working Days	:	300	
6	Bench: size & No	:	6m x 6m	
7	Elevation of Mine	:	502 AMSL to 496AMSL	
8	Ground Level Elevation	:	496 AMSL	
9	Ultimate Working Depth	:	472 AMSL	
10	Water Table	:	465-456 AMSL (31-40 mbgl)	
11	Topography of Mine	:	Area represents a gently sloping land	
12	Explosive Requirement	:	90 kg/day	
13	Diesel/Fuel requirement	:	90 litre/day	

Production Details

Year	Removal of Gritty Soil		Intercalated waste in cum	Production of Stone		Bench (AMSL)
	in cum	in tones		in cum	in tones	
1st	1581	2372	796	15116	42326	502-496
2nd	765	1148	878	16687	46723	496-490
3rd	621	932	1090	20712	57993	496-490
4th	216	324	1090	20712	57993	490-484
5th	000	000	1090	20712	57993	484-472
Total	3183	4776	4944	93939	263028	

Land Use

Type of Land	Existing (Ha)	Plan period(Ha)	Conceptual stage (Ha)
Quarry	0.0	0.736 (including backfilling 0.127 Ha.)	0.499 ha (water reservoir) and 0.237 ha area (shall be dead benches plantation)
Greenbelt with safety Barrier	0.0	0.380	0.380
Road	0.008	0.0	0.0
Total Area in use	0.008	1.116	1.116
Balanced Area Unused	1.108	0.00	0.0
Lease area	1.116 Ha		

ENVIRONMENT MANAGEMENT

Green Belt Development

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(Handwritten signatures and marks)

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.380 ha.	950
2	Along Approach Road	:	570 m	570
3	No. of Plants distributed in Anganwadi, Panchayat Bhawan or in schools	:	--	100

COST PROPOSED FOR EMP

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	14,000 8,000 8,000 7,000
3	Plantation	8,10,000	1,00,000
4	Construction and maintenance of haul road	1,42,500	90,000
TOTAL		9,52,500	4,27,000

Note: *1620 plants * 500 Rs (for each plants including hedges and fences)= Rs. 8.10 lakhs

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

300* 300 = 90000/-

*** 2.5 lakh per kilometer (250000 * 0.570 km haul road = 1,42,500/-)**

Environment Monitoring Programme

Sl. No	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

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

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Solid Waste Management

Total 4944 cum of Intercalated waste and 3183 cum of Gritty soil shall be generated during this plan period. During quarry development in 1st & 2nd year gritty soil and intercalated waste will be removed and this soil & waste will be temporarily dumped at the north part of the area & in 3rd year removed gritty soil & intercalated waste & existing temporarily dumped soil will be temporarily backfilled within the exhausted quarry & in 4th year removed gritty soil & intercalated waste will be temporarily backfilled within the exhausted quarry & in 5th year removed intercalated waste & total temporarily backfill soil will be backfilled within the lowest two benches of the exhausted quarry

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone Mining operation

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

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

Preventive Measures:

Face Stability

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

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

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Drilling Operations

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

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

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

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

Dust generation during drilling

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

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

Noise Generation during drilling

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

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

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

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

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

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

Handling of Explosives

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

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



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

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

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

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

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

Undertaking submitted affirming:

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

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

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Loharsi Stone Deposit of Shri Bhaskar Kumar, Village : Loharsi, Thana : Chandwa, Distt.: Latehar, Jharkhand (1.116 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II alongwith the following specific conditions :

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

10. Asna Brick Earth Mine of Shri Arindam Bala, Village : Asna, Thana / Circle : Baharagora, Distt.: East Singhbhum, Jharkhand (1.517 Ha).

(Proposal no.: SIA/JH/MIN/488208/2024)

Name of the consultant : P & M SOLUTION, Noida, U.P.

This is a new project which has been taken for appraisal on 24.07.2024.

Project Category : B2 – 1(a) Mining of Minerals : Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 1200 cum soil/Annum equivalent to 6,00,000 Bricks/Annum.

Project and Location Details:

Sl	Parameter	Details
1.	Project Name	: Asna Brick Earth Mine
2.	Lessee:	: Sri Arindam Bala S/o – Ashok Kumar Bala, AT - 218 NH-6, Near Baharagora Police Station, Baharagora, Bazar Baharagora, Dist - East Singhbhum, Jharkhand-832101
3.	Lease Address	: Village : Asna, Thana / Circle : Baharagora, Distt.: East Singhbhum, Jharkhand
4.	Lease Area	: 1.517 ha Acres- 3.75 Acres
5.	Type of Land	: Non Forest – Raiyati Land
6.	Project Cost	: Rs. 30 Lakhs
7.	EMP Budget	: Capital:3.89 Lakh Recurring: 3.82 Lakh / year
8.	New or Expansion	: New
9.	Mineable Reserves	: Cum.: 28470 cum Tonnes: 51246 tonnes
10.	Mine Life	: 10 Years / up to lease period
11.	Man power	: 11
12.	Water Requirement	: 7.39 ~ 7.40 KLD (Drinking: 0.11KLD,Dust Suppression:3.57 KLD, Plantation: 2.89 KLD)
13.	Water Source	: From Nearby villages by tankers
14.	DG Set / power	: -
15.	Crusher	: No crusher
16.	Nearest Water Body	: Subarnarekha River Approx 0.71 Km towards South direction.
17.	Nearest Habitation	: Asna, Approx. 0.40 km towards East direction.
18.	Nearest Rail	: Rajalukah Railway Station at a distance of 12.06 km towards SW

	Station	:	direction from site.
19.	Nearest Air Port	:	Birsa Munda Airport, at a distance of 188.34 km in NW direction from mine site.
20.	Nearest Forest	:	Open Jungle mainly, Approx. 3.0 km towards SE direction Open Jungle mainly, Approx. 4.0 km towards SE direction
21.	Road & Highways	:	NH-49, Approx, 1.77 km towards East direction.

CO-ORDINATES

1	Latitude	From 22°13'42.30"N	To 22°13'50.10"N
2	Longitude	From 86°42'07.30"E	To 86°42'12.70"E

LAND DETAILS

Khata no.	Plot no.
110	331 & 332

STATUTORY CLEARANCES

1	LOI / Lease docs	:	Land agreement made.
2	CO	:	The CO, Bahragora vide letter no. 813, dated 03.11.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyani & Register II.
3	DMO	:	DMO, East Singhbhum, Jamshedpur vide memo no. 601/Khanan, dated 04.07.2024 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Dalma Elephant Project vide letter no. 518, dated 04.04.2024 certified that the proposed project site is outside Eco Sensitive Zone of Dalma Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Jamshedpur Forest Division vide letter no. 2502, dated 31.10.2023 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	The DC, East Singhbhum, Jamshedpur vide letter no. 596/Khanan, dated 03.07.2024 has informed that this project is part of District Survey Report (DSR) of East Singhbhum district and accordingly necessary action with regard to Environmental Clearance can be taken.

7	Gram Sabha	:	BDO, Bahragora vide letter no. 1716, Dated 30.10.2023 informed that Gram Sabha conducted on 18.10.2023.
8	Mine Plan Approval	:	Approved by DMO, East Singhbhum, Jamshedpur vide Memo No. 547/Khanan, dated 24.06.2024.
9	Qualified Person	:	Shri Sahadev Singh was present in the meeting and affirmed that the mine plan has been made by him.

Working Details

1	Mining Method	:	Opencast Manual Mining method	
2	Quarry Area	:	1.517 ha	Life of Mine – 10 Years / up to lease period
3	Waste Generation	:	0.0cu.m	
4	Stripping Ratio	:	0: 0	
5	Working Days	:	150	
6	Bench: size & No	:	--	
7	Elevation of Mine	:	58 AMSL to 60 AMSL	
8	Ground Level Elevation	:	--	
9	Ultimate Working Depth	:	2 mtr.	
10	Water Table	:	33 mRL	
11	Topography of Mine	:	Area represents flat topography	
12	Explosive Requirement	:	--	
13	Diesel/Fuel requirement	:	--	

Production Details

Year	Production in Cum	Production in Tonnes	Nos. of Bricks in Lac
1 st	1200.00	2160	600000
2 nd	1200.00	2160	600000
3 rd	1200.00	2160	600000
4 th	1200.00	2160	600000
5 th	1200.00	2160	600000
Total	6000.00	10800	3000000.00

Land Use

Pattern of Utilization	Existing (Ha)	Plan period (Ha)	AT Conceptual period (Ha)
Mining/Quarrying	Nil	0.300	1.067 (area shall be reclaimed as cultivated land and handed over to the concern rayat).
Storage of casted bricks	Nil	0.00	Storage of casted bricks within quarry
Plantation at safety Zone	Nil	0.450	0.450
Total used Area	Nil	0.750	1.517

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	LOCATION	Area/Length	No of Trees
1	Safety Zone	0.45 ha	1125
2	Haul /Approach Road	0.220 km	220
3	No. of Plants distributed in Anganwadi, Panchayat Bhawan or in schools	--	100

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

Environment Management Plan

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring	--	
	i) Air		14,000
	ii) Water		8,000
	iii) Soil		8,000
	iv) Noise		7,000

3	Plantation	8,32,500	1,00,000
4	Construction and maintenance of haul road	1,00,000	45,000
TOTAL		9,32,500	3,82,000

Note: *1665 plants * 500Rs (for each plants including hedges) = 8.325lakhs

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

300* 150 = 45,000/-

Environment Monitoring Programme

S. No.	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

There is no generation of waste.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice.

- Ambient air pollution monitoring shall be carried out every six months.

Undertaking submitted affirming:

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

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Asna Brick Earth Mine of Shri Arindam Bala, Village : Asna, Thana / Circle : Baharagora, Distt.: East Singhbhum, Jharkhand (1.517 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II alongwith the following specific condition :

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

**11. Lolo Stone Block of M/s Saboo Trade Agencies (Partner : Shri Nikhil Kedia), Village : Lolo, P.S. : Ramgarh, Distt.: Ramgarh, Jharkhand (5.21 Ha).
(Proposal no.: SIA/JH/MIN/488768/2024)**

Name of the consultant : P & M SOLUTION, Noida, U.P.

This is a new project which has been taken for appraisal on 24.07.2024.

Project Category : B1 – 1(a) Mining of Minerals : Application for Terms of Reference (ToR) as per EIA notification, 2006.

TOR Application for: Proposed Capacity- 19391.63 cum/annum or 51000 TPA

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Lolo Stone Block (Area 5.21 Ha or 12.87 Acre)
2	Lessee:	: M/s Saboo Trade Agencies (Partner- Sri Nikhil Kedia) 12JJ Road, Upper Bazar Ranchi, District – Ranchi, State – Jharkhand
3	Lease Address	: Village : Lolo, P.S. : Ramgarh, Distt.: Ramgarh, Jharkhand
4	Lease Area	: 5.21 Ha Acres- 12.87 Acres
5	Type of Land	: Non- Forest (GM Khasland Land)
6	Project Cost	: Rs. 80 Lakhs
7	EMP Budget	: Capital: Rs. 6,42,000 Recurring: Rs. 5,10,000/ year
8	New or Expansion	: New
9	Mineable Reserves	: 2043667.80 tons
10	Mine Life / Lease period	: 10 years
11	Man power	: 30
12	Water Requirement	: 11.08 ~ 11.10 KLD,(Drinking: 0.30 KLD, Dust Suppression: 5.36KLD, Plantation: 5.42 KLD)
13	Water Source	: From Nearby villages by tankers
14	DG Set / power	: 500 KVA
15	Crusher	: With Crusher
16	Nearest Water Body	: Nil
17	Nearest Habitation	: Ramgarh, Approx. 8KM towards North-west direction.
18	Nearest Railway Station	: Mael Railway station, approx. 6.20 km toward ENE direction
19	Nearest Air Port	: Birsa Munda Airport, Ranchi approx. 37 km towards SW direction.
20	Nearest Forest	: Protected Forest, Approx. 0.8 km in S direction.

21	Road & Highways	:	NH-20 Approx. 4.20 km. in NW direction. NH-320 Approx. 8.0 km. in S direction. SH-2 Approx. 6.20 km. in NW direction

CO-ORDINATES

1	Latitude		From 23°33'25.60" N	To 23°23'34.99" N
2	Longitude		From 85°33'54.79" E	To 85°34'08.24" E

LAND DETAILS

Khata no.	Plot no.
184	2372 (P), 2374, 2376, 2378 (P) & 2380 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by Director, Mines, Deptt. of Mines & Geology, Govt. of Jharkhand vide letter no. Kha.Ni (Nilami)-02/2019/1853, dated 06.08.2019 and extension of validity of LoI issued by Director, Mines, Deptt. of Mines & Geology, Govt. of Jharkhand vide letter no. Kha.Ni (Nilami)-02/2019/101/M, dated 20.01.2022 and further extension of validity of LoI issued by Director, Mines, Deptt. of Mines & Geology, Govt. of Jharkhand vide letter no. Kha.Ni (Nilami)-02/2019/2245/M, dated 31.10.2023.
2	CO	:	The CO, Ramgarh vide letter no. 2583, dated 18.12.2021 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatyan & Register II.
3	DMO	:	DMO, Ramgarh vide memo no. 1111/Khanan, dated 18.11.2022 certified that 01 other mining lease area (3.23 Acre) exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Wildlife Division, Hazaribag vide letter no. 1676, dated 06.09.2019 certified that the proposed project site is outside Eco Sensitive Zone of Hazaribag Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Ramgarh vide letter no. 2290, dated 04.09.2019 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Ramgarh District (Sl.

		no. 06, Page no. 51).
7	Gram Sabha	: BDO, Ramgarh vide letter no. 52, dated 01.02.2022 informed that Gram Sabha conducted on 08.01.2022.
8	Mine Plan Approval	: Approved by Additional Director, Geology, Hazaribag vide Letter No. G/2022-23-199, dated 24.08.2022.
9	Qualified Person	: Shri Tapan Kumar Chakravarty vide e-mail dated 23.07.2024 affirmed that the mine plan has been prepared by him.
10	Baseline Study Period	: March, 2024 to May, 2024

Working Details

1	Mining Method	: Opencast Mechanized Method
2	Quarry Area	: Area 5.21 Ha or 12.87 Acre Life of Mine– 10 Years
3	Waste Generation	: Nil.
4	Stripping Ratio	: 1:0.00
5	Working Days	: 300
6	Bench: size & No	: 6m x 6m
7	Elevation of Mine	: 394 AMSL to 400AMSL
8	Ground Level Elevation	: 394 AMSL
9	Ultimate Working Depth	: 370 AMSL
10	Water Table	: 350 AMSL (15-20 mbgl)
11	Topography of Mine	: Area represents a undulating topography.
12	Explosive Requirement	: 110 kg/day
13	Diesel/Fuel requirement	: 110 litre/day

Production Details

Year	Production of Stone in cum	Production of Stone in Tonnes	Waste (cum) in plan period	Bench (AMSL)
1st	13688.21	36000.00	-	396 - 393
2nd	15969.58	42000.00	-	399 -393
3rd	18250.95	48000.00	-	400 -393
4th	19391.63	51000.00	-	393 -387
5th	19391.63	51000.00	-	399 -393
Total	86692.00	228000.00		

Land Use

Pattern of Utilization	Existing (Ha)	During plan period (ha)	After Life of mine (ha)
Quarry	0.200	1.139(0.011 Ha. Road comes under)	4.245 ha (3.446 ha area will be converted into rain water harvesting & rest 0.799 ha area dead bench plantation)
Road	0.125	0.114	0.003
Safety Zone	-	0.962	0.962
Total	0.325	2.215	5.21
Unused Area	4.885	2.995	-
Total Applied Area	5.21	5.21	5.21

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.962 Ha	2405
2	Along Approach Road	:	205m	410
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

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

Environment Management Plan

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	Nil	2,00,000

2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	50,000 40,000 20,000 10,000
3	Plantation	14,57,500	1,00,000
4	Construction and maintenance of haul road	1,00,000	90,000
TOTAL		15,57,500	5,10,000

Note: *2915 plants *500Rs (for each plants including hedges and fences)= 14.575 lakh

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

300* 300 = 90000/-

Environment Monitoring Programme

S. No.	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

There is no waste generated during this Mining Plan period, so there is no requirement of waste dumping Plan for this mining plan.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.

- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.

C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone Mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5

2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

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

Preventive Measures:

Face Stability

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

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

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

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

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the

face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

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

Dust generation during drilling

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

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

Noise Generation during drilling

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

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

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

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

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

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

Handling of Explosives

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

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

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

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

Health Hazards

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

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

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

Accident at Site

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

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

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

Transportation

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

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

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

Undertaking submitted affirming:

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

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 23, 24, 25, 26 & 27.07.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure IV alongwith the following specific conditions :-

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

- II. Copy of approved mine plan should be submitted at the time of submitting the final EIA for consideration for grant of Environmental Clearance. The mine plan must be approved as per directive of Deptt. of Mines & Geology, Govt. of Jharkhand issued vide letter no. 2078A, dated 27.09.2014.

12. Makandu Stone Mine of M/s Safari Stone Works (Prop. : Shri Anisur Rahman), Village : Makandu, Thana : Kuru, Distt.: Lohardaga, Jharkhand (1.21 Ha).

(Proposal no.: SIA/JH/MIN/487909/2024)

Name of the consultant : P & M SOLUTION, Noida, U.P.

This is a new project which has been taken for appraisal on 24.07.2024.

Project Category : B1 – 1(a) Mining of Minerals : Application for Terms of Reference (ToR) as per EIA notification, 2006.

TOR Application for: Proposed Capacity- 18915.19 cum/annum or 51071 TPA

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Makandu Stone Mine (Area 1.21 ha. or 3.0 Acre)
2	Lessee:	: M/s Safari Stone Works (Proprietor - Anisur Rahman), Makandu Jingi, Thana - Kuru, District – Lohardaga, Jharkhand
3	Lease Address	: Village : Makandu, Thana : Kuru, Distt.: Lohardaga, Jharkhand
4	Lease Area	: 1.21 Ha Acres- 3.0 Acres
5	Type of Land	: Non- Forest (Govt. Land)
6	Project Cost	: Rs. 90Lakhs
7	EMP Budget	: Capital: Rs. 412500 Recurring: Rs. 5,10,000/ year
8	New or Expansion	: New
9	Mineable Reserves	: 178688.88 cum or 482460 tons
10	Mine Life	: 10 years
11	Man power	: 20
12	Water Requirement	: 7.8 KLD, (Drinking: 0.20 KLD, Dust Suppression: 4.6KLD, Plantation: 3.0 KLD)
13	Water Source	: From Nearby villages by tankers

14	DG Set / power	:	200 KVA
15	Crusher	:	No Crusher
16	Nearest Water Body	:	Nil
17	Nearest Habitation	:	Barmaratola Itra, Approx. 1.0 towards ESE direction.
18	Nearest Railway Station	:	Barkichanpi Railway station, approx. 14.38 km towards West direction.
19	Nearest Air Port	:	Birsa Munda Airport, approx. 51.28 km towards ESE direction.
20	Nearest Forest	:	Open Mixed Jungle, Approx. 0.66 km towards SSE direction of mine site. Henjla, Approx. 4.15 km towards NNE direction of mine site. Open Mixed Jungle, Approx. 3.95 km towards SE direction of mine site. Open Jungle Mainly Sal, Approx. 4.85 km towards North direction of mine site.
21	Road & Highways	:	NH- 39, Approx. 2.84 km. in NNW direction. NH-139A, Approx. 5.94 km. in WNW direction.

CO-ORDINATES

Point	Latitude	Longitude
1	23°30'45.40" N	84°52'5.20" E
2	23°30'45.82" N	84°52'10.44" E
3	23°30'41.90" N	84°52'11.46" E
4	23°30'40.90" N	84°52'4.40" E

LAND DETAILS :

Khata No.		Plot No.
New	287	1223 (P)
Old	128	1171/P

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by Director of Mines,

		Deptt. of Mines & Geology, Govt. of Jharkhand vide letter no. Kha. Ni (Nilami)-10/2022/ 1947, dated 14.09.2022.
2	CO	: The CO, Kuru vide letter no. 401, dated 20.03.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyar.
3	DMO	: DMO, Lohardaga vide memo no. 584/M, dated 13.05.2023 certified that 02 other mining lease area (9.00 Acre & 1.50 Acre) exists within 500 m radius from proposed project site and total area is 13.5 Acre.
4	DFO Wild Life	: DFO, Wildlife Ranchi vide letter no. 122, dated 15.02.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Territorial	: Division Forest Officer, Ranchi West Forest Division, Lohardaga vide letter no. 2649, dated 21.12.2011 ertified that the distance of forest is 600 meter from proposed project site.
6	DSR	: This project is mentioned in approved District Survey Report (DSR) of Lohardaga district (Sl. no. 05, Page no. 41).
7	Gram Sabha	: Gram Sabha conducted on 09.01.2011.
8	Mine Plan Approval	: Approved by DMO, Lohardaga vide Letter No. 575/M, dated 05.12.2022.
9	Qualified Person	: Shri J.P. Bhattacharya vide e-mail dated 24.07.2024 afirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method	
2	Quarry Area	:	Area 1.21 ha. or 3.0 Acre	Life of Mine – 10 Years
3	Waste Generation	:	Nil.	
4	Stripping Ratio	:	0	
5	Working Days	:	300	
6	Benchs: size & No	:	6m x 6m	
7	Elevation of Mine	:	687AMSL to 693AMSL	
8	Ground Level Elevation	:	687AMSL	
9	Ultimate Working Depth	:	657AMSL	
10	Water Table	:	652 AMSL	
11	Topography of Mine	:	Area represents aundulating topography.	
12	Explosive Requirement	:	90kg/day	
13	Diesel/Fuel requirement	:	90 litre/day	

Production Details

Year	Production of Stone in tones	Production of Stone in cum	Bench (AMSL)
1st	51071	18915.19	687-684
2nd	51052	18908.15	693-687
3rd	51035	18901.85	687-675
4th	51068	18914.07	687-681
5th	51052	18908.14	681-669
Total	255278	94547.40	-

Land Use

Type of Land Use	Existing (ha)	End of Five years period (ha)	End of Conceptual stage (ha)
Quarry	0.250	0.400	0.710
Safety Zone	0.380 (Plantation)	0.380 (Plantation)	0.380 (Plantation)
Morrum Dump	0.100	0.100	0.100
Road	0.000	0.020	0.020
Total area in use	0.730	0.900	1.21
Balance area	0.480	0.310	0.00
Total Lease Area	1.21	1.21	1.21

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.380 Ha	950
2	Along Approach Road	:	450m	900
3	No. of Plants distributed in Anganwadi, Panchayat Bhawan or in schools	:	--	100

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation. Maintenance work such as h/w, mortality replacement, protection and watering shall be

undertaken for the life of mine as per norms and schedule issued by PCCF, Development, Department of Forest, Environment & Climate Change, Govt. of Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Environment Management Plan

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	50,000 40,000 20,000 10,000
3	Plantation	9,75,000	1,00,000
4	Construction and maintenance of haul road	1,12,500	90,000
TOTAL		10,87,500	5,10,000

Note: * 1950 plants * 500 Rs (for each plants including hedges and fences) = 9.75 lakh

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

300* 300 = 90000/-

* 2.5 lakh per kilometer (250000 * 0.45 km haul road = 1,12,500/-)

Environment Monitoring Programme

S. No.	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

The overburden materials in the form of morrum have already been removed during earlier periods of mine operation. The removed overburden materials i.e. morrum mostly have been kept stacked towards the south-east corner of the leasehold.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.

L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

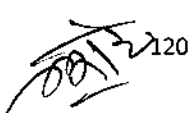
Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale








S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone Mining operation

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

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

Preventive Measures:

Face Stability

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

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

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

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

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

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

Dust generation during drilling

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

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

Noise Generation during drilling

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

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

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

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

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

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

Handling of Explosives

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

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

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

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

Health Hazards

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

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

Accident at Site

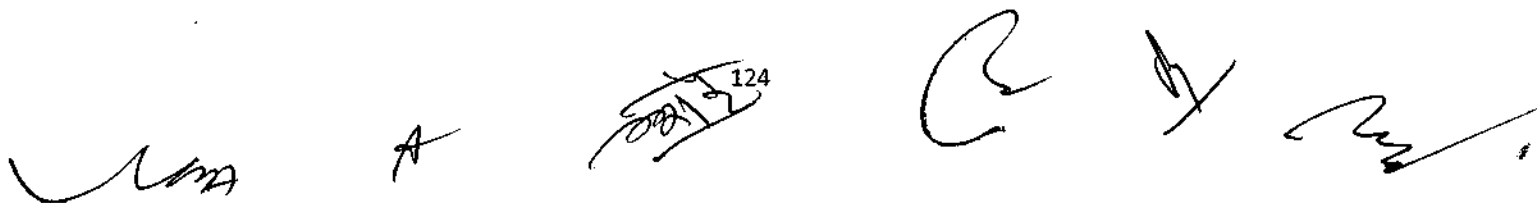
Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

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

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

Transportation

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

The bottom of the page features several handwritten signatures and initials in black ink. From left to right, there is a large, stylized signature, a smaller 'A' or similar mark, a signature with the number '124' written above it, a large 'C' or 'R' shaped mark, a signature that looks like 'D', and a final signature on the far right.

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

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

Undertaking submitted affirming:

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

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

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 23, 24, 25, 26 & 27.07.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith the following specific condition :-

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

13. Makandu Stone Mine of M/s Safari Stone Works, Village : Makandu, Thana : Kuru, Distt.: Lohardaga, Jharkhand (0.6075 Ha).

(Proposal no.: SIA/JH/MIN/487703/2024)

Name of the consultant : P & M SOLUTION, Noida, U.P.

This is a new project which has been taken for appraisal on 24.07.2024.

Project Category : B1 – 1(a) Mining of Minerals : Application for Terms of Reference (ToR) as per EIA notification, 2006.

TOR Application for: Proposed Capacity- 25011.11 cum/annum or 67530 TPA

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Makandu Stone Mine (Area 0.6075 ha. or 1.50 Acre)
2	Lessee:	: M/s Safari Stone Works (Proprietor - Anisur Rahman)

3	Lease Address	:	Village – Makandu, Thana - Kuru, District – Lohardaga, Jharkhand
4	Lease Area	:	0.6075 Ha Acres- 1.50 Acres
5	Type of Land	:	Non-Forest (Raiyati land)
6	Project Cost	:	Rs. 60Lakhs
7	EMP Budget	:	Capital: Rs. 4.215 Lakhs Recurring: Rs. 5.10 Lakhs / year
8	New or Expansion	:	New
9	Mineable Reserves	:	175328.88 cum or 473388 tons
10	Mine Life	:	10 years
11	Man power	:	23
12	Water Requirement	:	7.79 ~ 7.80 KLD, (Drinking: 0.23 KLD, Dust Suppression: 5.02 KLD, Plantation: 2.54 KLD)
13	Water Source	:	From Nearby villages by tankers
14	DG Set / power	:	200 KVA
15	Crusher	:	No Crusher
16	Nearest Water Body	:	South Koel River, Approx. 4.70 km towards South direction of mine site
17	Nearest Habitation	:	Hurhad, Approx. 1.33 KM towards SW direction.
18	Nearest Railway Station	:	Barkichanpi Railway station, approx. 14.3 km towards West direction.
19	Nearest Air Port	:	Birsa Munda Airport, approx. 51.2 km towards ESE direction.
20	Nearest Forest	:	Open Mixed Jungle, Approx. 0.66 km towards SSE direction of mine site. Henjla, Approx. 4.15 km towards NNE direction of mine site. Open Mixed Jungle, Approx. 3.95 km towards SE direction of mine site. Open Jungle Mainly Sal, Approx. 4.85 km towards North direction of mine site.
21	Road & Highways	:	NH- 39, Approx. 2.8 km. in NNW direction. NH-139A, Approx. 5.9 km. in WNW direction.

CO-ORDINATES

1	Latitude	From 23°30'42.78" N	To 23°30'46.37" N
2	Longitude	From 87°52'05.03" E	To 84°52'09.57" E

LAND DETAILS :

Khata No.		Plot No.
New	287	1223 (P)

Old	128	1171/P

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by Director of Mines, Deptt. of Mines & Geology, Govt. of Jharkhand vide letter no. Kha. Ni (Nilami)-10/2022/ 1948, dated 14.09.2022.
2	CO	:	The CO, Kuru vide letter no. 1075, dated 07.10.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyani & Register II.
3	DMO	:	DMO, Lohardaga vide memo no. 585/M, dated 13.05.2023 certified that 02 other mining lease area (9.00 Acre & 3.00 Acre) exists within 500 m radius from proposed project site and total area is 13.5 Acre.
4	DFO Wild Life	:	DFO, Wildlife Ranchi vide letter no. 122, dated 15.02.2023 certified that the proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Ranchi West Forest Division, Lohardaga vide letter no. 2218, dated 21.07.2008 certified that the distance of forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in District Survey Report (DSR) of Lohardaga district (Sl. no. 06, Page no. 41).
7	Gram Sabha	:	Gram Sabha conducted on 01.03.2006.
8	Mine Plan Approval	:	Approved by DMO, Lohardaga vide Letter No. 576/M, dated 05.12.2022.
9	Qualified Person	:	Shri J.P. Bhattacharya vide e-mail dated 24.07.2024 affirmed that the mine plan has been prepared by him.
10	Baseline Study Period	:	March, 2024 to May, 2024

Working Details

1	Mining Method	:	Opencast Mechanized Method	
2	Quarry Area	:	Area 0.6075 ha. or 1.50 Acre	Life of Mine – 10 Years
3	Waste Generation	:	6804 cum	

4	Stripping Ratio	:	1:0.01
5	Working Days	:	300
6	Benches: size & No	:	6m x 6m
7	Elevation of Mine	:	681AMSL to 697AMSL
8	Ground Level Elevation	:	697AMSL
9	Ultimate Working Depth	:	647AMSL
10	Water Table	:	560-565 (42-40 bgl)
11	Topography of Mine	:	Area represents a undulating topography.
12	Explosive Requirement	:	90 kg/day
13	Diesel/Fuel requirement	:	90 litre/day

Production Details

Year	Run of mine Stone (cum)	Run of mine Stone (t)	Overburden (M ³)	Bench (AMSL)
1st	25011.11	67530	6804	695-689
2nd	25011.11	67530	-	689-683
3rd	25011.11	67530	-	689-677
4th	25011.11	67530	-	683-671
5th	25011.11	67530	-	677-665

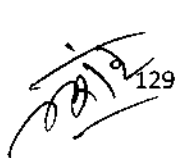
Land Use

Type of Land Use	Existing (ha)	End of Five years period (ha)	End of Conceptual stage (ha)
Quarry	0.0815	0.2800	0.4075
Safety Zone	0.2000 (Plantation)	0.2000 (Plantation)	0.2000 (Plantation)
Dumping area	Nil	0.0300	0.000
Total area in use	0.2815	0.5100	0.6075
Balance area	0.3260	0.0975	Nil
Total Lease Area	0.6075	0.6075	0.6075

ENVIRONMENT MANAGEMENT

Green Belt Development








S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.200 Ha	500
2	Along Approach Road	:	670m	1340
3	No. of Plants distributed in Anganwadi, Panchayat Bhawan or in schools	:	--	100

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

Environment Management Plan

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	50,000 40,000 20,000 10,000
3	Plantation	9,70,000	1,00,000
4	Construction and maintenance of haul road	1,67,500	90,000
Total		11,37,500	5,10,000

Note: *1940 plants * 500 Rs (for each plants including hedges and fences) = 9.70 lakh

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

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* 2.5 lakh per kilometer (250000 * 0.67 km haul road = 1,67,500/-)

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Solid Waste Management

Total 6804 cum OB generated during the plan period. The overburden materials in the form of morrmmy material will be dumped in an area near the junction point of north and western side lease boundaries during five years of mine operation. Later on these materials can be used for partial filling up of the mined out central region of the worked out quarry. This possibility can be explored at the end of conceptual stage of mine working.

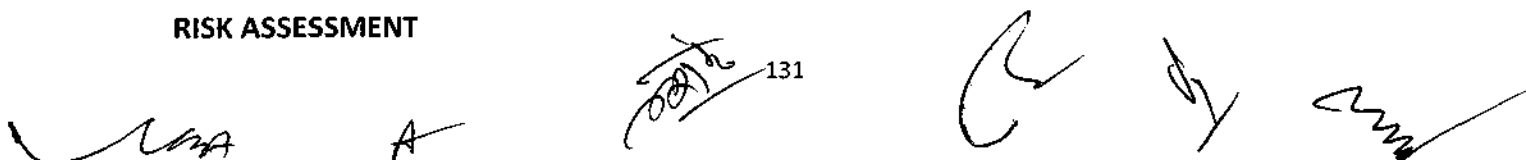
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RISK ASSESSMENT



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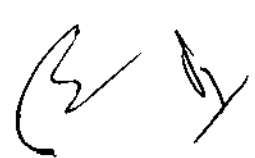
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3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
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6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

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

Preventive Measures:




133



Face Stability

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

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- Dust generation during drilling
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While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

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

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

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

Transportation

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

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

Undertaking submitted affirming:

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

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 23, 24, 25, 26 & 27.07.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith the following specific condition :-

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

14. Dhowadangal Stone Deposit of Md. Najimuddin, Village : Dhowadangal, Thana : Maheshpur, Distt.: Pakur, Jharkhand (1.42 Ha).

(Proposal no.: SIA/JH/MIN/487294/2024)

Name of the consultant : P & M SOLUTION, Noida, U.P.

This is a new project which has been taken for appraisal on 24.07.2024.

Project Category : B1 – 1(a) Mining of Minerals : Application for Terms of Reference (ToR) as per EIA notification, 2006.

ToR Application for: Production capacity: 53340.00 cu.m/annum or 144018.00 TPA of stone

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Dhowadangal Stone Deposit
2	Lessee:	: M/s Md. Najimuddin, At P.O.- Kashimnagar, District– Birbhum , State – West Bengal.
3	Lease Address	: Village – Dhowadangal, Thana- Maheshpur, District – Pakur, State -Jharkhand
4	Lease Area	: Ha:1.42 ha Acres:3.50 Acre
5	Type of Land	: Non Forest – Raiyati Land
6	Project Cost	: Rs. 180 Lakhs
7	EMP Budget	: Capital: 9.80 Lakhs Recurring: 5.10 Lakh / year
8	New or Expansion	: New
9	Mineable Reserves	: Cu.M.: 533680.0 Cu. M. Tonnes: 1440936.00 tons
10	Mine Life	: 8 years i.e 28/12/2031
11	Man power	: 20
12	Water Requirement	: 7.83 ~ 7.90 KLD (Drinking:0.20KLD, Dust Suppression: 4.11 KLD, Plantation:3.52KLD)
13	Water Source	: From Nearby villages by tankers
14	DG Set / power	: 200 KVA
15	Crusher	: No crusher
16	Nearest Water Body	: Bansoli River, Approx. 10.0 km towards S direction of mine site.
17	Nearest Habitation	: Dhowadangal, 0.15km
18	Nearest Rail Station	: Nagarnabi Railway station, approx. 14.65 km towards ENE direction.
19	Nearest Air Port	: Deoghar Airport, approx. 105.10 km towards W direction.
20	Nearest Forest	: Protected Forest at approx 2.40 km towards E direction of mine site.

		Protected Forest at approx 3.40 km towards NE direction of mine site. Protected Forest at approx 5.40 km towards NW direction of mine site.
21	Road & Highways	: NH-133 A, Approx. 8.50 km. in NNE direction.

CO-ORDINATES

1	Latitude	From 24°34'59.70"N	To 24°35'03.83"N
2	Longitude	From 87°43'19.90"E	To 87°43'26.30"E

LAND DETAILS :

Khata no	Plot no
12	554, 556
13	555

STATUTORY CLEARANCES

1	LOI / Lease docs	: The LOI has been issued by District Mining Office, Pakur vide letter no. 978/M dated 26.06.2021.
2	CO	: The CO, Maheshpur vide letter no. 182/Ra., dated 08.03.2021 has mentioned the plot of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	: DMO, Pakur vide memo no. 605/M, dated 13.05.2024 certified that the other mining lease area exists within 500 m radius from proposed project site and total area is 13.68 Acre or 5.54 Ha.
4	DFO Wild Life	: DFO, Wildlife Hazaribagh vide letter no. 516 dated 09.03.2021 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Lake Bird Sanctuary.
5	DFO Territorial	: DFO, Pakur Forest Division vide letter no. 328, dated 17.02.2021 certified that the distance of reserved / protected forest is more than 250 m from proposed project site.
6	DSR	: The DC-cum-District Magistrate, Pakur vide letter no. 1412/M, dated 12.08.2021 has informed that this project is part of District Survey Report (DSR) of Pakur District and accordingly necessary action with regard to Environmental Clearance can be taken.
7	Gram Sabha	: BDO, Maheshpur vide letter no. 361/Vi., dated 12.03.2021 informed that Gram Sabha conducted on 09.03.2021.

8	Mine Plan Approval	:	Approved by DMO, Pakur vide Memo no. 1359/M dated 04.08.2021.
9	Qualified Person	:	Shri Tapan Kumar Chakravarty vide e-mail dated 23.07.2024 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi - Mechanized Mining method	
2	Quarry Area	:	1.42 hectare or 3.50 Acres	Life of Mine - 8 years i.e 28/12/2031
3	Waste Generation	:	6052.00 cum waste generated during the plan period.	
4	Stripping Ratio	:	1: 0.008	
5	Working Days	:	300	
6	Bench: size & No	:	6m x 6m	
7	Elevation of Mine	:	(128 AMSL to 130 AMSL) AMSL	
8	Ground Level Elevation	:	128 AMSL	
9	Ultimate Working Depth	:	100 AMSL (30 m)	
10	Water Table	:	80 AMSL (50 m)	
11	Topography of Mine	:	Area represents a undulating topography	
12	Explosive Requirement	:	90 kg/day	
13	Diesel/Fuel requirement	:	90 litre/day	

Production Details

Year	Production of stone (Cum)	Production of stone (Tonne)	Waste Generation (CuM)	Bench (AMSL)
1 st	52360.00	141372.00	6052.00	128 – 124
2 nd	52780.00	142506.00	-	130 - 124
3 rd	53060.00	143262.00	-	124 - 118
4 th	53340.00	144018.00	-	124 - 118
5 th	53340.00	144018.00	-	124 - 118
Total	264880.00	715176.00	6052.00	

Land Use

Pattern of Utilization	Existing (Ha)	Plan period (Ha)	Conceptual stage (Ha)

Quarry	Nil	1.077	1.077 (area shall be left as water reservoir for rain water harvesting)
Road	0.013	(Comes under quarry)	(Comes under quarry)
Proposed Dump	Nil	Nil	Nil
Safety Zone	Nil	0.343 (Plantation)	0.343 (Plantation)
Total	0.013	1.42	1.42
Unused Area	1.407	0.000	0.000
Total Applied Area	1.42	1.42	1.42

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.343 ha.	860
2	Along Approach Road	:	400 m	800
3	No. of plants distributed with consultation local authorities /village Panchayat	:	--	100

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

Environment Management Plan

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000

2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	50,000 40,000 20,000 10,000
3	Plantation	8,80,000	1,00,000
4	Construction and maintenance of haul road	1,00,000	90,000
TOTAL		9,80,000	5,10,000

Note: *1760 plants * 500 Rs (for each plants including hedges and fences) = Rs. 8.80 lakhs.

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

300*300 = 90000/-

* 2.5 lakh per kilometer (250000 * 0.400 km haul road = 1,00,000/-)

Environment Monitoring Programme

S. No.	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

Total 6052.0 cum or 16340.40 tons waste generated during this plan period which is used for village & haul road maintenance.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation.Excess water, if any shall be discharged in natural stream after settling of suspendedparticles in the pit. Pump having required capacity will be installed to liftaccumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall becollected in garland drain and allowed to settle in a small pit for settling suspendedparticles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, dischargefrom Soak Pit, if any shall be used for plantation.

- It shall be ensured that quality of drinking water for the worker is hygienic and goodsanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha' road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask etc shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate

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		corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone Mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
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- Untrained drivers
- Overturning vehicles

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

Transportation

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

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

- Only trained drivers will be hired

Undertaking submitted affirming:

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

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 23, 24, 25, 26 & 27.07.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith the following specific condition :-

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

15. Kashila Stone Deposit of M/s Shree Guru Stone Works (Prop. : Shri Amarjit Singh), Village : Kashila, Thana : Pakur (M), Distt.: Pakur, Jharkhand (2.30 Ha).

(Proposal no.: SIA/JH/MIN /487004/2024)

Name of the consultant : P & M SOLUTION, Noida, U.P.

This is a new project which has been taken for appraisal on 24.07.2024.

Project Category : B1 – 1(a) Mining of Minerals : Application for Terms of Reference (ToR) as per EIA notification, 2006.

**ToR Application for: Production capacity:- 11538.0 cu.m/annum or 31,151.0 TPA
Waste:-6087.00 cum**

Project and Location Details:

Sl	Parameter		Details
1	Project Name	:	Kashila Stone Deposit
2	Lessee:	:	M/s Shree Guru Stone Works, Proprietor- Sri Amarjit Singh At-Malgodam Road, P.O.+P.S.+District – Pakur, State –Jharkhand
3	Lease Address	:	Village – Kashila, Thana – Pakur (M), District – Pakur, Jharkhand
4	Lease Area	:	Ha:- 2.30ha Acres:-5.69 Acres
5	Type of Land	:	Non Forest – Rayati Land
6	Project Cost	:	110 Lakhs
7	EMP Budget	:	Capital: 8.66 Lakhs Recurring: 5.10 Lakhs
8	New or Expansion	:	New
9	Mineable Reserves	:	Cum:-115377 Cum Tonnes:-311517.90 Tones
10	Mine Life	:	8 Years i.e 28/12/2031
11	Man power	:	18
12	Water Requirement	:	6.309 ~ 6.30 KLD (Drinking: 0.18 KLD, Dust Suppression: 3.065 KLD, Plantation: 3.064 KLD)
13	Water Source	:	From Nearby villages by tankers
14	DG Set / power	:	500 KVA
15	Crusher	:	No crusher
16	Nearest Water Body	:	Torai Nadi, approx. 6.0 km towards NE direction of mine site.

17	Nearest Habitation	:	Kashila village, approx. 200 meters towards North direction.
18	Nearest Rail Station	:	Tilbhita Railway station, approx. 3.50 km toward ENE direction.
19	Nearest Air Port	:	Birsa Munda Airport, approx. 293.20 km towards SW direction.
20	Nearest Forest	:	Dhangora Pahar PF approx. 6.75 km towards S direction of mine site Protected Forest near Belpahari Village Approx. 3.24 km towards WNW direction of mine site. Protected Forest near Bhandaro village Approx. 4.10 km towards NW direction of mine site.
21	Road & Highways	:	NH-133 A, Approx. 2.80 km. in South direction.

CO-ORDINATES

1	Latitude	From 24°40'14.34"N	To 24°40'22.58"N
2	Longitude	From 87°48'24.51"E	To 87°48'32.30"E

LAND DETAILS :

Khata no.	Plot no.
48	646(P)
39	647(P), 647/1587(P)
21	648(P), 649(P),
44	650(P), 651(P),
59	652(P), 653(P),
65	654(P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The LOI has been issued by District Mining Office, Pakur vide letter no. 1073/M dated 06.07.2021.
2	CO	:	The CO, Maheshpur, Pakur vide letter no. 1671, dated 31.10.2020 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Pakur vide memo no. 604/M, dated 13.05.2024 certified that the other mining lease area exists within 500 m radius from

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			proposed project site and total area is 17.44 Acre or 7.06 Ha.
4	DFO Wild Life	:	DFO, Wildlife Hazaribagh vide letter no. 605, dated 23.03.2021 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Lake Bird Sanctuary.
5	DFO Territorial	:	DFO, Pakur Forest Division vide letter no. 526 dated 12.03.2021 certified that the distance of reserved / protected forest is more than 250 meter from the project site.
6	DSR	:	The DC-cum-District Magistrate, Pakur vide letter no 1412/M dated 12.08.2021 has informed that this project is part of District Survey Report (DSR) of Pakur district and accordingly necessary action with regard to Environmental Clearance can be taken.
7	Gram Sabha	:	BDO, Pakur vide letter no. 2697/Vi., dated 07.11.2020 informed that Gram Sabha conducted on 31.10.2020.
8	Mine Plan Approval	:	Approved by Additional Director, Geology, Hazaribag vide letter no. 675/G dated 09.09.2021.
9	Qualified Person	:	Shri Tapan Kumar Chakravarty vide e-mail dated 23.07.2024 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi - Mechanized Mining method	
2	Quarry Area	:	2.30 hectare	Life of Mine – 8 Years i.e 28/12/2031
3	Waste Generation	:	6087.00 cum	
4	Stripping Ratio	:	01: 0.10	
5	Working Days	:	300	
6	Benches: size & No	:	3m x 3m	
7	Elevation of Mine	:	29AMSL to 33AMSL	
8	Ground Level Elevation	:	29 AMSL	
9	Ultimate Working Depth	:	25.6 AMSL	
10	Water Table	:	16.6 AMSL	
11	Topography of Mine	:	Area represents a undulating topography	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel	:	110 liter/day	

requirement	

Production Details

Year	Production of stone (Cum)	Production of stone (Tonne) Cum*2.7	Total Waste Generation (cum)	Bench RL in Meters
1 st	11538.00	31151.00	3550.00	30 mRL – 29.95 mRL
2 nd	11538.00	31151.00	713.00	29.95 mRL – 28.8 mRL
3 rd	11538.00	31151.00	608.00	28.8 mRL- 27.85 mRL
4 th	11538.00	31151.00	608.00	27.85 mRL – 26.7 mRL
5 th	11537.00	31148.00	608.00	26.7 mRL-25.6 mRL
Total	57689.00	155752.00	6087.00	

Land Use

Pattern of Utilization	Existing (Ha)	During plan period (ha)	After Life of mine (ha)
Quarry	Nil	1.064	1.804 (0.735 ha area shall be backfilled & entire area after backfilling will be converted into water reservoir)
Road/Haul Road	0.003	0.025	Nil
Proposed Dump	Nil	0.15	Nil
Garland Drain & Sump	Nil	0.013	Nil
Parapet Wall	Nil	0.005	Nil
Safety Zone	Nil	0.493 (Plantation)	0.496 (Plantation)
Total	0.003	1.750	2.30
Unused Area	2.297	0.55	Nil
Lease Hold Area	2.30	2.30	2.30

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	LOCATION	Area/Length	No of Trees
1	Safety Zone	: 0.493ha	1232
2	Along Approach Road	: 0.100 km	200
3	No. of plants distributed with consultation local authorities /village Panchayat	: 100	100

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

Environment Management Plan

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	50,000 40,000 20,000 10,000
3	Plantation	7,66,000	1,00,000
4	Construction and maintenance of haul road	1,00,000	90,000
TOTAL		8,66,000	5,10,000

Note: *1532plants * 500 Rs (for each plants including hedges and fences)= 7.66 lakh

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

300* 300 = 90000/-

Environment Monitoring Programme

S. No.	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

- Waste Generation will be 6087.00 Cum during the Plan Period. At Plan Period proposed waste shall be temporarily dump on southern side of the applied area. Some quantity of the removed gritty soil would also be used for road dressing and plantation. After conceptual period De-Stoned area of quarry will be reclaimed to the extent possible.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 5m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the plt. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha' road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask etc shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.

L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard Identification & Risk Analysis in Stone Mining operation

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

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

Preventive Measures:

Face Stability

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

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

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

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

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

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

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

Dust generation during drilling

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

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

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

Noise Generation during drilling

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

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

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

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

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

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

Handling of Explosives

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

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

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

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

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

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

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- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
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- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

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

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

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 23, 24, 25, 26 & 27.07.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith the following specific condition :-

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- II. Copy of approved mine plan should be submitted at the time of submitting the final EIA for consideration for grant of Environmental Clearance. The mine plan must be approved as per directive of Deptt. of Mines & Geology, Govt. of Jharkhand issued vide letter no. 2078A, dated 27.09.2014.

16. Pratappur & Mansinghpur Stone Mine of M/s Four Star Stone Works (Prop. : Shri Ahidur Rahman), Village : Pratappur & Mansinghpur, Thana : Hiranpur, Distt.: Pakur, Jharkhand (2.65 Ha).

(Proposal no.: SIA/JH/MIN/486540/2024)

Name of the consultant : P & M SOLUTION, Noida, U.P.

This is a new project which has been taken for appraisal on 24.07.2024.

Project Category : B1 – 1(a) Mining of Minerals : Application for Terms of Reference (ToR) as per EIA notification, 2006.

ToR Application for: Production capacity: 45,080 cum/annum or 130734.00 TPA of stone

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Pratappur & Mansinghpur Stone Mine Along with Crusher
2	Lessee:	: M/s Four Star Stone Works Proprietor- Ahidur Rahman S/o Abu Bakkar At Vill – Naya Anjana, P.S.- Prithvinagar, District– Pakur, State – Jharkhand..
3	Lease Address	: Village – Pratappur & Mansinghpur, P.S. - Hiranpur, District – Pakur, Jharkhand
4	Lease Area	: Ha:2.65 ha Acres:6.55 Acre
5	Type of Land	: Non Forest – Raiyati Land
6	Project Cost	: Rs. 120 Lakhs
7	EMP Budget	: Capital: 14.21Lakhs Recurring: 5.10Lakh / year
8	New or Expansion	: New
9	Mineable Reserves	: Cu.M.:455554.83Cu. M. Tonnes:13,21,109 tons
10	Mine Life	: 9 years i.e 08/04/2032
11	Man power	: 27
12	Water Requirement	: 11.419 ~ 11.50 KLD (Drinking:0.27KLD,Dust Suppression:5.865KLD, Plantation:5.284KLD)
13	Water Source	: From Nearby villages by tankers
14	DG Set / power	: 500 KVA
15	Crusher	: Yes
16	Nearest Water Body	: Torai Nadi , Approx. 3.25 km towards SE direction of mine site.
17	Nearest Habitation	: Mansinghpur, 0.50km
18	Nearest Rail Station	: Kotalpukur Railway station, approx. 7.05 km toward NE direction.
19	Nearest Air Port	: Birsa Munda Airport, Ranchi, approx. 291.80 km towards SW direction.
20	Nearest Forest	: Dhangora Pahar PF, Approx. 9.0 km towards S direction. Protected Forest near Belpahari Village, Approx. 3.0 km towards W direction. Protected Forest near Bhandaro village, Approx. 3.50 km towards NW direction.
21	Road & Highways	: NH-133A at Approx. 3.15 km. in WSW direction

CO-ORDINATES

1	Latitude	From 24°41'43.99"N To 24°41'53.46"N

2	Longitude	From 87°46'13.50"E	To 87°46'20.33"E

LAND DETAILS :

Khata no.	Plot no.
71	54(P)
20	73, 72/1542
8	595
7	596
6	618, 619, 597
9	620, 621, 622, 623
4	616, 617, 625, 594

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The LOI has been issued by District Mining Office, Pakur vide letter no. 1732/M dated 28.09.2019.
2	CO	:	The CO, Hiranpur (Pakur) vide letter no. 157/Ra., dated 24.03.2021 has mentioned the plot nos. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyani & Register II.
3	DMO	:	DMO, Pakur vide memo no. 602/M, dated 13.05.2024 certified that the other mining lease area exists within 500 m radius from proposed project site and total area is 12.36 Acre or 5.00 Ha.
4	DFO Wild Life	:	DFO Wildlife Hazaribagh, vide letter no. 1486, dated 30.07.2019 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Lake Bird Sanctuary.
5	DFO Territorial	:	DFO, Pakur Forest Division vide letter no. 1659, dated 27.10.2016 certified that the distance of forest is more than 250 meter from proposed project site.
6	DSR	:	This project site has mentioned in approved District Survey Report (DSR) of Pakur District (Sl. no. 67, Page no. 70).
7	Gram Sabha	:	BDO, Hiranpur vide letter no. 521/Vi. Dated 26.07.2019 informed that Gram Sabha conducted on 22.07.2019
8	Mine Plan Approval	:	Approved by DMO, Pakur vide Memo no. 1505/M dated 27.08.2021

9	Qualified Person	:	Shri Tapan Kumar Chakravarty vide e-mail dated 23.07.2024 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi Mechanized Mining method	
2	Quarry Area	:	2.65 hectare or 6.55 acre	Life of Mine— 9 years i.e 08/04/2032
3	Waste Generation	:	16826.30 cum	
4	Stripping Ratio	:	1: 0.04	
5	Working Days	:	300	
6	Benches: size & No	:	5m x 5m	
7	Elevation of Mine	:	51 AMSL to 49 AMSL	
8	Ground Level Elevation	:	51 AMSL	
9	Ultimate Working Depth	:	30 ASML	
10	Water Table	:	10 ASML	
11	Topography of Mine	:	Area represents a undualating topography	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	110 litre/day	

Production Details

Year	Production of stone (Cum)	Production of stone (Tonne)	Waste Generation (CuM)	Bench RL in Meters
1 st	41514.48	123292.00	5505.76	51 mRL – 45 mRL
2 nd	44681.00	129576.00	4574.05	51 - 40 mRL
3 rd	45080.00	130734.00	2254.01	45- 40 mRL
4 th	44882.41	130159.00	2244.13	40 mRL - 35 mRL
5 th	44966.21	130402.00	2248.35	40 - 45 mRL
Total	221124.10	644163.00	16826.30	

Land Use

Pattern of Utilization	Existing (Ha)	Plan period (Ha)	Conceptual stage (Ha)
Quarry	0.013	0.855	1.840 (0.316 ha area shall be backfilled & 1.524 ha RWH)

Road	0.009	0.047	0.006
Proposed Dump	Nil	0.295	Nil
Proposed Crusher	Nil	0.035	Nil
Safety Zone Plantation	Nil	0.801	0.801
Total	0.022	2.033	2.65
Unused Area	2.628	0.617	0.000
	2.65	2.65	2.65

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Safety Zone	0.801 ha/2002	2002
2	Along Approach Road	310m	620
3	No. of plants distributed with consultation local authorities /village Panchayat	--	100

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

Environment Management Plan

Sr. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	50,000 40,000 20,000 10,000
3	Plantation	13,21,000	1,00,000
4	Construction and maintenance of haul road	1,00,000	90,000
TOTAL		14,21,000	5,10,000

Note: *2642 plants * 500 Rs (for each plants including hedges and fences)= 13.21 lakh

Salary of Labour for haul road maintenance 1 labor*300 =300 per day
300* 300 = 90,000/-

Environment Monitoring Programme

S. No.	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

- Waste Generation will be 16826.30Cu.m. during the life of Mine. Proposed waste shall be temporarily dump on centre side of the applied area. The Waste shall be removed which will be used in maintenance of mine road and village road.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation.Excess water, if any shall be discharged in natural stream after settling of suspendedparticles in the pit. Pump having required capacity will be installed to liftaccumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall becollected in garland drain and allowed to settle in a small pit for settling suspendedparticles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, dischargefrom Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and goodsanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emissionduring drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically toreduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission

- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha' road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask etc shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or

		system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone Mining operation

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

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

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

Preventive Measures:

Face Stability

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

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

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

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

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

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

Dust generation during drilling

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

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

Noise Generation during drilling

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

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

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

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

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

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

Handling of Explosives

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

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

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

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

Health Hazards

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

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

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

Accident at Site

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

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

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

Transportation

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

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.

- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

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

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 23, 24, 25, 26 & 27.07.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for

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issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith the following specific condition :-

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

17. Baliapatra Stone Deposit of Shri Abhinash Kumar Bhagat, Village : Baliapatra, Thana : Maheshpur, Distt.: Pakur, Jharkhand (2.343 Ha).

(Proposal no.: SIA/JH/MIN/484390/2024)

Name of the consultant : P & M SOLUTION, Noida, U.P.

This is a new project which has been taken for appraisal on 24.07.2024.

Project Category : B1 – 1(a) Mining of Minerals : Application for Terms of Reference (ToR) as per EIA notification, 2006.

ToR Application for: Capacity- 62073.90 cum/annum or 180014.31 TPA

Project Details :

Sl	Parameter	Details
1	Project Name	: Baliapatra Stone Deposit
2	Lessee:	: Sri Abhinash Kumar Bhagat
3	Lease Address	: Village :Baliapatra, Thana- Maheshpur, District – Pakur, Jharkhand
4	Lease Area	: 2.343 Ha Acres- 5.79 Acre
5	Type of Land	: Non Forest Raiyati Land
6	Project Cost	: Rs. 120 Lakhs
7	EMP Budget	: Capital: 14.15 Lakhs Recurring: 5.10 Lakh / year
8	New or Expansion	: New
9	Mineable Reserves	: cum.: 620750 cum Tonnes: 1800175.00 tons
10	Mine Life	: 8 years i.e till 17/12/2031
11	Man power	: 20
12	Water Requirement	: 11.5 KLD

13	Water Source	:	From Nearby villages by tankers
14	DG Set / power	:	500KVA
15	Crusher	:	No crusher
16	Nearest Water Body	:	Triaghana Nadi- Approx. 6.80 km towards S direction of mine site.
17	Nearest Habitation	:	Baliapatra- Approx 0.27km towards W direction from the mine site.
18	Nearest Rail Station	:	Chatra Railway station, approx. 10.75 km toward East direction.
19	Nearest Air Port	:	Birsa Munda Airport, approx. 272 km towards SW direction.
20	Nearest Forest	:	Open Eucalyptus Jungle RF- Approx. 9.24 km towards S direction of mine site. Open Mixed Jungle - Approx. 4.95 km towards E direction of mine site. Reserved Forest near Madhupur Village - Approx. 9.66 km towards S direction of mine site
21	Road & Highways	:	SH-7, Approx. 10.80 km. in East direction

CO-ORDINATES

1	Latitude	From 24°22'15.89"N	To 24°22'23.13"N
2	Longitude	From 87°44'28.46"E	To 87°44'38.16"E

LAND DETAILS :

Khata No.	Plot No.
15, 21 & 22	419, 693, 694, 695, 701, 702, 703, 704, 708, 709, 710, 711, 716, 717, 718, 719, 720, 721 & 722

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The LOI has been issued by District Mining Office, Pakur vide letter no. 344/M dated 26.02.2020.
2	CO	:	The CO, Maheshpur vide letter no. 838/Vi. dated 23.10.2019 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyar & Register II.

3	DMO	:	DMO, Pakur vide memo no. 600/M, dated 13.05.2024 certified that the other mining lease area exists within 500 m radius from proposed project site and total area is 15.83 Acre or 6.41 Ha.
4	DFO Wild Life	:	DFO, Wildlife Hazaribagh vide letter no. 2470, dated 09.11.2019 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Lake Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide letter no. 1333, dated 31.10.2019 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved District Survey Report (DSR) of Pakur District (Page no. 71).
7	Gram Sabha	:	BDO, Maheshpur Vide Letter no 1534/vi, dated-22.10.2019 informed that Gram Sabha conducted on 22.10.2019.
8	Mine Plan Approval	:	Approved by Deputy Director Mines, Santhal Pargana Circle, Dumka vide Letter No. 373/DDM, dated 01.08.2023.
9	Qualified Person	:	Shri Tapan Kumar Chakravarty vide e-mail dated 23.07.2024 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi- Mechanized Method
2	Quarry Area	:	2.343 hectares or 5.79 Acres
			Life of Mine – 8 years i.e till 17/12/2031.
3	Waste Generation	:	1917.0 cum or 5559.3Tons
4	Stripping Ratio	:	01: 0.002
5	Working Days	:	300
6	Benches: size & No	:	6m to 6m
7	Elevation of Mine	:	73mRL to 84 mRL
8	Ground Level Elevation	:	73 mRL
9	Ultimate Working Depth	:	up to 50mRL
10	Water Table	:	Up to 40 mRL
11	Topography of Mine	:	Undulating topography
12	Explosive Requirement	:	110kg/day
13	Diesel/Fuel requirement	:	110 litre/day

Production Details

Year	Production of stone in (cum)	Production of stone in (tons)	Waste in Plan Period (cum)	Waste in Ultimate Period (cum)
1st	59500.00	172550.00	--	3387.00
2nd	59850.00	173565.00	657.00	
3rd	60970.00	176813.00	1260.00	
4th	62073.90	180014.31	--	
5th	62073.90	180014.31	--	
Total	304467.80	882956.62	1917.00	3387.00

Land Use

Pattern of Utilization	Existing (Ha)	Plan period(Ha)	Conceptual stage (Ha)
Quarry	0.490	0.714	1.701
Road	0.048	0.048	(comes under quarry)
Safety Zone	0.000	0.642(Plantation)	0.642(Plantation)
Total	0.538	1.404	2.343
Unused Area	1.805	0.939	0.000
Total Applied Area	2.343	2.343	2.343

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.642ha	1605
2	Along Approach Road	0.45 km	900
3	No. of plants distributed in Schools, Anganwadi or village Panchayat	--	100

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary) and on either side of approach road in two rows with the spacing of 3x3 m with suitable species such as timber & fruit bearing etc. will be done in first year of operation.

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

EMP Budget

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	50,000 40,000 20,000 10,000
3	Plantation	13,02,500	1,00,000
4	Construction and maintenance of haul road	1,12,500	90,000
TOTAL		14,15,000	5,10,000

Environment Monitoring Programme

S. No.	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

- Total 1917.0 cum or 5559.3Tons waste shall be generated during this plan period During quarry advancement gritty soil & intercalated waste will be removed and this will be temporarily dumped within the applied area and in conceptual period backfilled within the exhausted quarry.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.

- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone Mining operation

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

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

Preventive Measures:

Face Stability

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

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
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- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

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

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

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

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

Dust generation during drilling

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

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

Noise Generation during drilling

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

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

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

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

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

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

Handling of Explosives

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

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

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

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

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

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

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

Undertaking submitted affirming:

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

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

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 23, 24, 25, 26 & 27.07.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith the following specific condition :-

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

18. Srirampur Stone Deposit of M/s Cee Bee Stone Works (Prop. : Shri Jitendra Kumar Bellani),
Village : Srirampur, Thana : Pakur, Distt.: Pakur, Jharkhand (2.73 Ha).

(Proposal no.: SIA/JH/MIN/486098/2024)

Name of the consultant : P & M SOLUTION, Noida, U.P.

This is a new project which has been taken for appraisal on 24.07.2024.

Project Category : B1 – 1(a) Mining of Minerals : Application for Terms of Reference (ToR) as per EIA notification, 2006.

EC Application for: Production capacity: 57600.00 cu.m/annum or 144000.00 TPA

PROJECT and LOCATION Details:

Sl	Parameter	Details
1	Project Name	: Srirampur Stone Deposit (Area 2.73 hectare or 6.75 Acres)
2	Lessee:	: M/s Cee Bee Stone Works, Partner- Sri Jitendra Kumar Bellani, At P.O.-Sindhipara, P.O+District – Pakur, State –Jharkhand
3	Lease Address	: Village – Srirampur, P.S. – Pakur, District – Pakur, Jharkhand
4	Lease Area	: Ha:- 2.73 ha Acres:-6.75 Acres

5	Type of Land	:	Non Forest – Rayati Land	
6	Project Cost	:	140 Lakhs	
7	EMP Budget	:	Capital: 13.35 Lakhs	Capital: 5.10 Lakhs
8	New or Expansion	:	New	
9	Mineable Reserves	:	Cum: 5,75,200 cum.	Tonnes: 14,38,000 tons
10	Mine Life	:	9 years i.e 08/04/2032	
11	Man power	:	25	
12	Water Requirement	:	10.48 ~ 10.50 KLD (Drinking: 0.25 KLD, Dust Suppression: 5.29 KLD, Plantation: 4.94 KLD)	
13	Water Source	:	From Nearby villages by tankers	
14	DG Set / power	:	500 KVA	
15	Crusher	:	No crusher	
16	Nearest Water Body	:	Torai Nadi , Approx. 8.0 km towards NW direction	
17	Nearest Habitation	:	Srirampur approx. 0.165 km SSW direction.	
18	Nearest Rail Station	:	Ngarnabi Railway station, approx. 5.0 km. East direction.	
29	Nearest Air Port	:	Deoghar Airport, approx. 114 km. West direction.	
20	Nearest Forest	:	Protected Forest near Mohanpur Village at approx 3.0 km towards SE direction of mine site. Protected Forest near Dhangora Pahar at 6.0 km towards NW direction of mine site. Protected Forest near Khutigora Village at 8.5 km towards West direction of mine site.	
21	Road & Highways	:	NH-133 A, approx. 4.72 km. in NNE direction.	

CO-ORDINATES

1	Latitude	From 24°35'40.88"N	To 24°35'47.54"N
2	Longitude	From 87°49'00.13"E	To 87°49'09.85"E

LAND DETAILS :

Khata no.	Plot no.
36	544(P), 545(P), 546(P)
31	540
38	493(P), 494(P), 495(P), 496, 529, 541

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The LOI has been issued by District Mining Office, Pakur vide letter no. 595/M, dated 19.05.2021.
2	CO	:	The CO, Pakur vide letter no. 1344/Ra., dated 01.09.2020 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyani & Register II.
3	DMO	:	DMO, Pakur vide memo no. 607/M, dated 13.05.2024 certified that the other mining lease area exists within 500 m radius from proposed project site and total area is 13.03 Acre or 5.27 Ha.
4	DFO Wild Life	:	DFO, Wildlife Hazaribag vide letter no. 780, dated 13.05.2021 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Lake Bird Sanctuary.
5	DFO Territorial	:	DFO, Pakur Forest Division vide letter no. 326 dated 17.02.2021 certified that the distance of reserved / protected forest is more than 250 meter from proposed project site.
6	DSR	:	The DC-cum-District Magistrate, Pakur vide letter no 1412/M dated 12.08.2021 has informed that this project is part of District Survey Report (DSR) of Pakur District and accordingly necessary action with regard to Environmental Clearance can be taken.
7	Gram Sabha	:	BDO, Pakur vide letter no. 2476/Vi., dated 06.10.2020 informed that Gram Sabha conducted on 08.08.2020.
8	Mine Plan Approval	:	Approved by DMO, Pakur vide Memo no. 1339/M dated 03.08.2021.
9	Qualified Person	:	Shri Tapan Kumar Chakravarty vide e-mail dated 23.07.2024 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi - Mechanized Mining method	
2	Quarry Area	:	2.73 ha. or 6.75 Acre	Life of Mine – 9 years i.e 08/04/2032
3	Waste Generation	:	16960.00 cum	
4	Stripping Ratio	:	1: 0.02	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Elevation of Mine	:	44AMSL to 49 AMSL	
8	Ground Level Elevation	:	25AMSL	
9	Ultimate Working Depth	:	20 AMSL	

10	Water Table	:	10 AMSL
11	Topography of Mine	:	Area represents a undulating topography
12	Explosive Requirement	:	110kg/day
13	Diesel/Fuel requirement	:	110 litre/day

Production Details

Year	Production of stone (Cum)	Production of stone (Tonne) Cum*2.5	Waste Generation (cum)	Bench RL in Meters
1 st	50080.00	125200.00	16960.00	49 mRL – 44 mRL
2 nd	51200.00	128000.00	Nil	44 mRL - 38 mRL
3 rd	55200.00	138000.00	Nil	44 mRL- 32 mRL
4 th	57600.00	144000.00	Nil	38 mRL - 32 mRL
5 th	57600.00	144000.00	Nil	32 mRL-26 mRL
Total	271680.00	679200.00	16960.00	

Land Use

Pattern of Utilization	Existing (Ha)	Plan period (Ha)	Conceptual stage (Ha)
Quarry	Nil	1.145	2.004 (0.228 ha area shall be backfilled & entire area after backfilling will be converted into water reservoir)
Road	0.014	0.003	0.003 (0.010 comes under quarry)
Proposed Dump	Nil	0.337	Nil
Safety Zone	Nil	0.723 (Plantation)	0.723 (Plantation)
Total	0.014	2.208	2.730
Unused Area	2.716	0.522	0.000
Total Lease area	2.73	2.73	2.73

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	LOCATION		Area/Length	No of Trees
1	Safety Zone	:	0.723 ha	1810
2	Haul /Approach Road	:	0.28 km	560
3	No. of Plants distributed in Anganwadi, Panchayat Bhawan	:	-	100

or in schools		

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

Environment Management Plan

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	50,000 40,000 20,000 10,000
3	Plantation	12,35,000	1,00,000
4	Construction and maintenance of haul road	1,00,000	90,000
TOTAL		13,35,000	5,10,000

Note: *2470 plants * 500 Rs (for each plants including hedges and fences)= 12.35 lakh

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

300* 300 = 90000/-

Environment Monitoring Programme

S. No.	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

- Waste Generation will be 16960.00 Cum. during the Plan Period. At Plan Period proposed waste shall be temporarily dump on eastern corner of the applied area.

Some quantity of the removed gritty soil would also be used for road dressing and plantation. After conceptual period De-Stoned area of quarry will be reclaimed to the extent possible.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 5m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
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- Noise Generation due to drilling
- Entrapment in by moving part of the drilling equipment

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- The person in charge of the drilling machine is competent to carry out the drilling operation; part of the training includes instructions to always face towards the open edge of the bench so that any inadvertent backward step is away from the edge.
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The hazard is the inhalation of dust which is created during the drilling operation. Properly applied control measures can substantially reduce the risk to the drill operator

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The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

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- Blast site shall be wetted before and after blasting operations are completed.
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- Poorly designed shots can result in misfires, early ignition and flying rock.

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

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- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
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The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

- Mine road shall be made smooth regularly with a road roller.
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- Mine roads will be designed as per the specifications given under MMR 1961.
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- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.

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

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 23, 24, 25, 26 & 27.07.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith the following specific condition :-

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

19. Srirampur Stone Deposit of Shri Rajiv Ranjan Pandey, Village : Srirampur, Thana : Pakur, Distt.: Pakur, Jharkhand (2.54 Ha).

(Proposal no.: SIA/JH/MIN/486134/2024)

Name of the consultant : P & M SOLUTION, Noida, U.P.

This is a new project which has been taken for appraisal on 24.07.2024.

Project Category : B1 – 1(a) Mining of Minerals : Application for Terms of Reference (ToR) as per EIA notification, 2006.

TOR Application for: Proposed Capacity: 34695.00 cum/annum or 100615.50 TPA

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Srirampur Stone Deposit
2	Lessee:	: M/S Rajiv Ranjan Pandey (Partner- Sri Rajiv Ranjan Pandey & Shri. Baski Nath Pandey) At P.O.- Sindhipara, PS – Pakur, District- Pakur, State- Jharkhand
3	Lease Address	: Village – Srirampur, Thana- Pakur, District – Pakur, State – Jharkhand.
4	Lease Area	: 2.54 ha Acres: 6.28 Acres
5	Type of Land	: Non Forest – Raiyati Land
6	Project Cost	: Rs. 140 Lakhs
7	EMP Budget	: Capital: Rs. 13.75 Lakhs Recurring: Rs. 5.10 Lakh / year
8	New or Expansion	: New
9	Mineable Reserves	: Cum.: 351069 cum Tonnes: 1018100.1 tons
10	Mine Life	: 9 year i.e 06/02/2032
11	Man power	: 19
12	Water Requirement	: 10.39 ~ 10.40 KLD (Drinking: 0.19 KLD, Dust Suppression: 5.10 KLD, Plantation: 5.10 KLD)
13	Water Source	: From Nearby villages by tankers
14	DG Set / power	: 500 KVA
15	Crusher	: No crusher
16	Nearest Water Body	: Torai Nadi , approx. 7.67 km towards NE direction of mine site
17	Nearest Habitation	: Approx. 50 m in SW direction
18	Nearest Rail Station	: Ngarnabi Railway station, approx. 5.0 km toward East direction
19	Nearest Air Port	: Deoghar Airport, approx. 114 km towards West direction
20	Nearest Forest	: Protected Forest approx. 2.5 km towards SE direction of mine site Protected Forest approx. 8.0 km towards NW direction of mine site Protected Forest approx. 8.0 km towards WSW direction of mine site
21	Road & Highways	: NH-133A, Approx. 5.19 km. in North direction. SH-7, Approx. 7.55 km. in SE direction

CO-ORDINATES

1	Latitude	From 24°35'26.03"N	To 24°35'31.35"N
2	Longitude	From 87°49'00.60"E	To 87°49'07.79"E

LAND DETAILS :

Khata no.	Plot no.
8	699 (P), 709 (P), 711 (P), 723 (P), 710, 724 (P)
27	712 (P), 713 (P)
34	714 (P)
42	715 (P)
5	716 (P), 717 (P), 718 (P), 719 (P), 720, 702 (P), 703 (P), 704, 705, 706, 707 & 708 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The LOI has been issued by District Mining Office, Pakur vide letter no. 596/M, dated 19.05.2021.
2	CO	:	The CO, Pakur vide letter no. 974/Ra., dated 30.06.2020 has mentioned the plot no. of the project is not recorded as "Jungle Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, Pakur vide memo no. 606/M, dated 13.05.2024 certified that the other mining lease area exists within 500 m radius from proposed project site and total area is 16.69 Acre or 6.75 Ha.
4	DFO Wild Life	:	DFO, Wildlife Hazaribagh vide letter no. 424, dated 01.03.2021 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Lake Bird Sanctuary.
5	DFO Territorial	:	DFO, Pakur Forest Division vide letter no. 273, dated 04.02.2021 certified that the distance of reserved / protected forest is more than 250 meter from the proposed project site.
6	DSR	:	The DC-cum-District Magistrate, Pakur vide letter no 1412/M dated 12.08.2021 has informed that this project is part of District Survey Report (DSR) of Pakur District and accordingly necessary action with regard to Environmental Clearance can be taken.
7	Gram Sabha	:	BDO, Pakur vide letter no. 1321/Vi., dated 22.06.2020 informed that Gram Sabha conducted on 16.06.2020.
8	Mine Plan Approval	:	Approved by DMO, Pakur vide memo no. 1541/M dated 03.09.2021.
9	Qualified Person	:	Shri A.K. Sinha vide e-mail dated 24.07.2024 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi - Mechanized Mining method	
2	Quarry Area	:	2.54 ha. or 6.28 Acres	Life of Mine – 9 year i.e 06/02/2032
3	Waste Generation	:	5 years– 72924.00 cum	
4	Stripping Ratio	:	1: 0.07	
5	Working Days	:	300	
6	Benches: size & No	:	5 m x 5m	
7	Elevation of Mine	:	44 AMSL to 44 AMSL	
8	Ground Level Elevation	:	44 AMSL	
9	Ultimate Working Depth	:	21 AMSL (23 mbgl)	
10	Water Table	:	19 AMSL (25 mbgl)	
11	Topography of Mine	:	Area represents a gently undulating terrain	
12	Explosive Requirement	:	110 kg/day	
13	Diesel/Fuel requirement	:	110 L/day	

Production Details

Year	Production of stone (Tonnes)	Production of stone (Cum)	Waste Generation (Cum)	Bench in AMSL
1 st	76055.40	26226.0	37298.0	40 - 36
2 nd	100615.50	34695.0	35626.0	40 - 36
3 rd	100531.40	34666.0	Nil	36 - 31
4 th	100516.90	34661.0	Nil	36 - 31
5 th	79358.50	27365.0	Nil	31 - 26
Total	457077.70	157613.0	72924.00	

Land Use

Pattern of Utilization	Existing (Ha)	Plan period (Ha)	Conceptual stage (Ha)
Quarry	Nil	0.93	1.21 (to be converted to water body after reducing the depth partially)
Road	0.0	0.10	Nil
Proposed Dump	Nil	0.07	Nil

Safety Zone Plantation	Nil	0.83 (Plantation)	0.90 (Plantation)
Total	0.0	1.93	2.11
Unused Area	2.54	0.61	0.43
Leasehold Area	2.54	2.54	2.54

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location		Area/Length	No. of Trees
1	Safety Zone	:	0.90 ha.	2250
2	Along Approach Road	:	100 m	200
3	No. of Plants distributed in Anganwadi, Panchayat Bhawan or in schools	:	--	100

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

Solid Waste Management

About 72924.00 cum waste (overburden) shall be generated. The OB consist of weathered rock intermixed with soil. The generated waste will be dump temporarily on the SE side of the lease area & will be used in maintenance of mine road and village road. (dump area- 0.07 ha & height- 3 m).

Environment Management Plan

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	50,000 40,000 20,000 10,000
3	Plantation	12,75,000	1,00,000
4	Construction and maintenance of haul road	1,00,000	90,000
TOTAL		13,75,000	5,10,000

Note: *2550 plants * 500 Rs (for each plants including hedges and fences) = 12.75 lakh

Salary of Labour for haul road maintenance 1 labor*300 = 300 per day

300* 300 = 90000/-

Environment Monitoring Programme

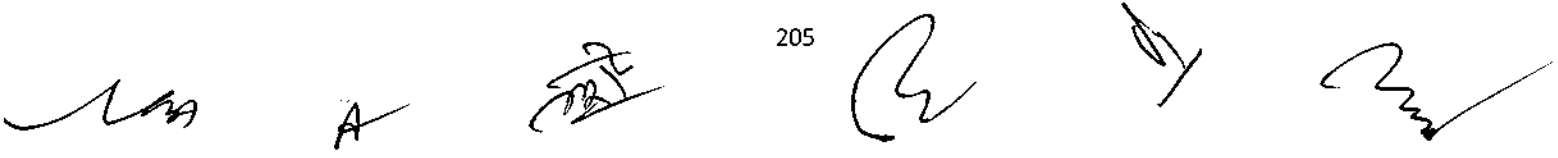
S. No.	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done



- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)

C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone Mining operation

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

		material, Exposure to Dust	Unlikely		
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

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

Preventive Measures:

Face Stability

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

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

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

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

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

- It will be ensured that the drilling equipment is suitable for the job.

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

Dust generation during drilling

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

- Wet drilling will be carried out by constantly injecting a jet of water at the drill bit inside the hole, which prevents dust generation
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- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Slope of the Water bodies to be stabilized using gabion plantation created at the end of life of the mine.
- k. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- l. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 23, 24, 25, 26 & 27.07.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith the following specific condition :-

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

20. Talpahari Stone Mine of M/s Jishan Stone Works (Prop. : Md. Ziaul Rahman), Mouza : Talpahari, Thana : Hiranpur, Distt.: Pakur, Jharkhand (1.05 Ha).

(Proposal no.: SIA/JH/MIN /486094/2024)

Name of the consultant : P & M SOLUTION, Noida, U.P.

This is a new project which has been taken for appraisal on 24.07.2024.

Project Category : B1 – 1(a) Mining of Minerals : Application for Terms of Reference (ToR) as per EIA notification, 2006.

ToR Application for: Production capacity: 10,283 cu.m/annum or 27,764.00 TPA of stone

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Talpahari Stone Mine
2	Lessee:	: M/s Jishan Stone Works Prop.- Md. JiyaulRahman S/o Md. ZakimShaikh Vill. & Panchayat – Jay Kishtopur, P.O.- Manirampur, P.S- Pakur, District– Pakur, State – Jharkhand.
3	Lease Address	: Village – Talpahari, Thana - Hiranpur, District – Pakur, Jharkhand
4	Lease Area	: 1.05 ha Acres- 2.60 Acres
5	Type of Land	: Non Forest – Rayati Land
6	Project Cost	: Rs. 80 Lakhs
7	EMP Budget	: Capital: 6.75 Lakhs Recurring: 5.10 Lakh / year
8	New or Expansion	: New
9	Mineable Reserves	: 75126 Cum or 202840 tones
10	Mine Life	: 8 years i.e 17/11/2031
11	Man power	: 19
12	Water Requirement	: 4.69~4.70 KLD (Drinking:0.19KLD, Dust Suppression:2.2 KLD, Plantation: 2.3 KLD)
13	Water Source	: From Nearby villages by tankers
14	DG Set / power	: 200 KVA
15	Crusher	: No crusher
16	Nearest Water Body	: Torai Nadi, Approx. 4.0 km towards S direction of mine site.
17	Nearest Habitation	: Mansingpur, Approx. 0.20 km towards SE direction of mine site.
18	Nearest Railway Station	: Kotalpukur Railway station, Approx. 6.91 km towards NE direction.
19	Nearest Air Port	: Deoghar Airport approx. 112.11 km towards WSW direction.
20	Nearest Forest	: Protected Forest near Belpahari Village, Approx 4.20 km towards WNW direction of mine site.

		Protected Forest near Dhatapatra Village, Approx 8.0 km towards NNE direction of mine site.
21	Road & Highways	: NH-133A, Approx. 3.85 km in WSW direction.

CO-ORDINATES

1	Latitude	From 24°41'48.52"N	To 24°41'29.69"N
2	Longitude	From 87°46'26.59"E	To 87°46'31.29"E

LAND DETAILS :

Khata no	Plot No
08	1231, 1232, 1233, 1234
21	1226 (P), 1227 (P), 1228, 1230

STATUTORY CLEARANCES

1	LOI / Lease docs	: The LOI has been issued by District Mining Office, Pakur vide letter no. 469/M dated 23.03.2021.
2	CO	: The CO, Hiranpur vide letter no. 220/Ra., dated 06.06.2020 has mentioned the plot nos. of the project is not recorded as "Jungle Jhari" in R.S. Khatiyon & Register II.
3	DMO	: DMO, Pakur vide memo no. 601/M, dated 13.05.2024 certified that the other mining lease area exists within 500 m radius from proposed project site and total area is 13.35 Acre or 5.40 Ha.
4	DFO Wild Life	: DFO, Wildlife Hazaribagh, vide letter no. 1510, dated 09.09.2021 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Lake Bird Sanctuary.
5	DFO Territorial	: DFO, Pakur Forest Division, vide letter no. 391 dated 25.02.2021 certified that distance of reserved / protected forest is more than 250 m from proposed project site.
6	DSR	: The DC-cum-District Magistrate, Pakur Vide Letter no. 1412/M, dated 12.08.2021 has informed that this project is part of District Survey Report (DSR) of Pakur district and accordingly necessary action with regard to Environmental Clearance can be taken.
7	Gram Sabha	: BDO, Hiranpur vide letter no. 583/Vi., dated 24.07.2020 informed that Gram Sabha conducted on 20.07.2020.
8	Mine Plan	: Approved by DMO, Pakur vide memo no. 1450/M dated

	Approval		19.08.2021.
9	Qualified Person	:	Shri A.K. Sinha vide e-mail dated 24.07.2024 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi - Mechanized method
2	Quarry Area	:	1.05 ha/ 2.60 Acres
			Life of Mine – 8 years i.e 17/11/2031
3	Waste Generation	:	3680.00 Cu.M waste generated during the plan period.
4	Stripping Ratio	:	1: 0.07
5	Working Days	:	300
6	Bench: size & No	:	3m x 3/4m
7	Elevation of Mine	:	44AMSL
8	Ground Level Elevation	:	44AMSL
9	Ultimate Working Depth	:	20AMSL
10	Water Table	:	15 AMSL
11	Topography of Mine	:	Area represents a flat topography
12	Explosive Requirement	:	90 Kg/day
13	Diesel/Fuel requirement	:	90 litre/day

Production Details

Year	Production of stone (Cum)	Production of stone (Tonne)	Waste Generation (CuM)	Bench (AMSL)
1 st	10132.00	27356	1400.00	44-41
2 nd	10055.00	27148	0.0	41-38
3 rd	9872.00	26655	0.0	38-32
4 th	10283.00	27764	2280.00	44-29
5 th	10237.00	27640	0.0	41-35
Total	50579.00	136563.00	3680.00	--

Land Use

Pattern of Utilization	Existing (Ha)	Plan period (Ha)	End of Mine (Ha)	Status of land at the end life of the Mine

Mining Activities	0.09	0.45	0.56	Water Reservoir
Road	0.00	0.01	0.01	Green Belt
Parapet Wall	0.00	0.03	0.03	Parapet Wall
Garland Drain	0.00	0.07	0.07	Green Belt
Safety Zone	0.00	0.38 (Plantation)	0.38 (Plantation)	Green Belt
Dump	0.00	0.03	0.00	Removed and Reclaimed
Utilized	0.00	0.97	1.05	-
Unutilized	0.96	0.08	0.00	-
Total Lease hold Area	1.05	1.05	1.05	-

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	LOCATION		Area/Length	No of Trees
1	Safety Zone	:	0.380 ha	950
2	Haul /Approach Road	:	0.05 km	100
3	No. of Plants distributed in Anganwadi, Panchayat Bhawan or in schools	:	--	100

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

Environment Management Plan

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	50,000 40,000 20,000 10,000
3	Plantation	5,75,000	1,00,000
4	Construction and maintenance of haul road	1,00,000	90,000
TOTAL		6,75,000	5,10,000

Note: *1150 plants * 500 Rs (for each plants including hedges and fences)= Rs. 5.75 lakhs

Salary of Labor for haul road maintenance 1 labor*300 =300 per day
300* 300 = 90000/-

Environment Monitoring Programme

S. No.	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

- Waste Generation will be 3680.00 Cu.M. during the life of Mine. Proposed waste shall be temporarily dump on SW side. The Waste shall be removed which will be used in maintenance of mine road and village road.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha' road shall be done.

- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask etc shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

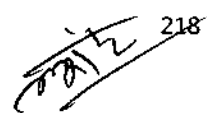
Severity/Impact Intensity

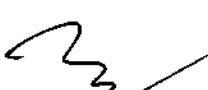
Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)





Consequence)					
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone Mining operation

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

6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

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

Preventive Measures:

Face Stability

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

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

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

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

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

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

Dust generation during drilling

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

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

Noise Generation during drilling

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

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

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

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

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

- Blast hole geometry shall be properly designed.

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

Handling of Explosives

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

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

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

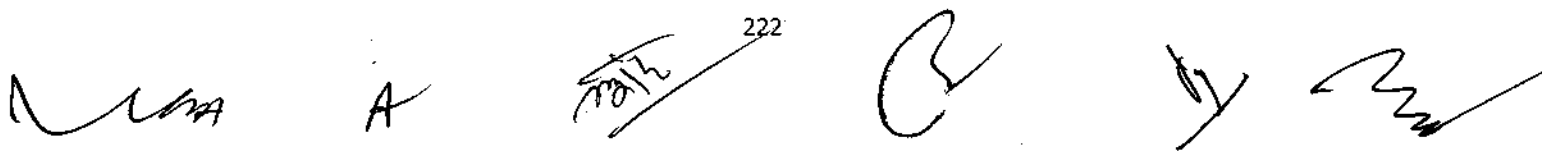
- Proper and safe storage of explosives in approved and Licensed Magazine
- Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
-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

Health Hazards

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

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

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interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

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

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

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

Transportation

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

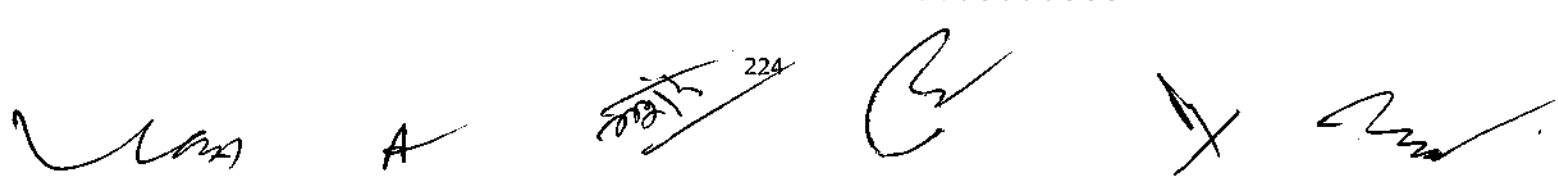
- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
-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

Undertaking submitted affirming:

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

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 23, 24, 25, 26 & 27.07.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith the following specific condition :-

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

The bottom of the page features several handwritten signatures and initials. From left to right, there is a large, stylized signature, the letter 'A', a signature with the number '224' written above it, a circular mark, a cross-like mark, and another signature.

**21. Talpahari Stone Deposit of M/s Manoj Stone Works (Prop. : Shri Manoj Kumar Gond),
Village : Talpahari, Thana : Hiranpur, Distt.: Pakur, Jharkhand (2.541 Ha).**

(Proposal no.: SIA/JH/MIN /487056/2024)

Name of the consultant : P & M SOLUTION, Noida, U.P.

This is a new project which has been taken for appraisal on 24.07.2024.

**Project Category : B1 – 1(a) Mining of Minerals : Application for Terms of Reference (ToR)
as per EIA notification, 2006.**

ToR Application for: Production capacity: 25512.05 cu.m/annum or 68882.56 TPA of stone

PROJECT and LOCATION Details:

Sl	Parameter	Details
1	Project Name	: Talpahari Stone Deposit
2	Lessee	: M/s Manoj Stone Works Prop.: Sri Manoj Kumar Gond S/o Sri Shyam Lal Gond At Vill – Saharkol, District– Pakur , State – Jharkhand
3	Lease Address	: Village – Talpahari, Thana - Hiranpur, District – Pakur, Jharkhand
4	Lease Area	: 2.541 ha Acres- 6.28 Acres
5	Type of Land	: Non Forest – Rayati Land
6	Project Cost	: Rs. 1.30 Crore.
7	EMP Budget	: Capital: 15.675Lakhs Recurring: 5.10 Lakh / year
8	New or Expansion	: New
9	Mineable Reserves	: 252681.95 Cum or 682241.27 tons
10	Mine Life	: 8 Years i.e 28/12/2031
11	Man power	: 43
12	Water Requirement	: 12.77~12.80 KLD (Drinking: 0.43KLD, Dust Suppression: 6.526 KLD, Plantation: 5.814KLD
13	Water Source	: From Nearby villages by tankers
14	DG Set / power	: 500 KVA
15	Crusher	: No crusher
16	Nearest Water Body	: Torai Nadi, approx. 3.25 km towards SSE direction
17	Nearest Habitation	: Talpahari, Approx. 0.49 km towards WNW direction of mine site.
18	Nearest Railway Station	: Tilbhita Railway station, approx. 6.0 km toward ESE direction.
19	Nearest Air Port	: Deoghar Airport approx. 112.0 km towards WSW direction.
20	Nearest Forest	: Dhangora Pahar PF, Approx. 8.95 km towards S direction. Protected Forest near Mahora Village, Approx. 3.0 km towards WNW direction of mine site.

		Protected Forest, Approx. 8.13 km towards NE direction of mine site.
21	Road & Highways	: NH-133A, Approx. 4.91 km. in WSW direction.

CO-ORDINATES

1	Latitude	From 24°41'59.0669"N	To 24°42'05.3601"N
2	Longitude	From 87°47'14.1207"E	To 87°47'23.2693"E

LAND DETAILS :

Khata no.	Plot no.
03	426(P), 429, 430, 435, 436, 437, 438, 439, 440, 441 & 442

STATUTORY CLEARANCES

1	LOI / Lease docs	: The LOI has been issued by District Mining Office, Pakur vide letter no. 1328/M dated 27.08.2020.
2	CO	: The CO, Hiranpur vide letter no. 519/Ra., dated 10.10.2019 has mentioned the plot nos. of the project is not recorded as "Jungle Jhari" in R.S. Khatiyani & Register II.
3	DMO	: DMO, Pakur vide memo no. 603/M, dated 13.05.2024 certified that the other mining lease area exists within 500 m radius from proposed project site and total area is 13.25 Acre or 5.36 Ha.
4	DFO Wild Life	: DFO, Wildlife Hazaribagh vide letter no. 2198, dated 30.12.2020 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Lake Bird Sanctuary.
5	DFO Territorial	: DFO, Pakur Forest Division, vide letter no. 1272, dated 18.10.2019 certified that distance of reserved / protected forest is more than 250 m from proposed project site.
6	DSR	: This project is mentioned in approved DSR of Pakur District.
7	Gram Sabha	: BDO, Hiranpur vide letter no. 683/Vi., dated 10.10.2019 informed that Gram Sabha conducted on 04.10.2019.
8	Mine Plan Approval	: Approved by Additional Director, Geology, Hazaribagh vide letter no. 214/G dated 28.11.2020.
9	Qualified Person	: Shri Anal Kumar Sinha vide e-mail dated 23.07.2024 affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi - Mechanized method	
2	Quarry Area	:	2.541 ha/ 6.28 Acres	Life of Mine – 8 Years i.e 28/12/2031
3	Waste Generation	:	24576.66 Cum waste generated during the plan period.	
4	Stripping Ratio	:	1: 0.19	
5	Working Days	:	300	
6	Bench: size & No	:	6m x 6m	
7	Elevation of Mine	:	46AMSL to 53 AMSL	
8	Ground Level Elevation	:	46AMSL	
9	Ultimate Working Depth	:	40AMSL	
10	Water Table	:	31 AMSL	
11	Topography of Mine	:	Area represents a undulatorytopography	
12	Explosive Requirement	:	110 Kg/day	
13	Diesel/Fuel requirement	:	110 litre/day	

Production Details

Year	Production of stone (Cum)	Production of stone (Tonne)	Total Waste Generation (Cum)	Bench (AMSL)
1 st	25,512.05	68882.56	8587.74	46
2 nd	25,496.76	68841.27	5849.94	46
3 rd	25,481.47	68799.97	6010.13	46
4 th	25,450.88	68717.38	2788.52	46-40
5 th	25,466.17	68758.67	1340.33	40
Total	127,407.33	343999.85	24576.66	--

Land Use

Pattern of Utilization	Existing (Ha)	Plan period (Ha)	Conceptual Plan (Ha)
Quarry	0.000	1.148	1.781 (0.565 ha area shall be backfilled & 1.216 ha. Left as water reservoir)

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Road	0.015	0.034	0.002
Waste Dump	Nil	0.141	0.0
Safety Zone	Nil	0.758 (Plantation)	0.758 (Plantation)
Total	0.015	2.081	2.541
Unused Area	2.526	0.460	0.000

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	LOCATION		Area/Length	No of Trees
1	Safety Zone	:	0.758 ha	1895
2	Haul /Approach Road	:	0.456 km	912
3	No. of Plants distributed in Anganwadi, Panchayat Bhawan or in schools	:	--	100

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

Environment Management Plan

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	50,000 40,000 20,000 10,000
3	Plantation	14,53,500	1,00,000

4	Construction and maintenance of haul road	1,14,000	90,000
TOTAL		15,67,500	5,10,000

Note: *2907 plants * 500 Rs (for each plants including hedges and fences)= 14.535 lakh

Salary of Labour for haul road maintenance 1 labor*300 =300 per day

300* 300 = 90,000/-

*** 2.5 lakh per kilometer (250000 * 0.456 km haul road = 1,14,000 /-)**

Environment Monitoring Programme

S. No.	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Solid Waste Management

- Waste Generation will be 24576.66 CUM during the life of Mine. Proposed waste shall be temporarily dump on SW side. The Waste shall be removed which will be used in maintenance of mine road and village road.

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.

- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha' road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask etc shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to

		personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone Mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5
2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock	Occasional	Major	6

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

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

Preventive Measures:

Face Stability

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

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

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

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

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the

face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

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

Dust generation during drilling

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

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

Noise Generation during drilling

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



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

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

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

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

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

Handling of Explosives

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

- Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the

weight of explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.

- Poorly designed shots can result in misfires, early ignition and flying rock.

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

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

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

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

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard

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

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 23, 24, 25, 26 & 27.07.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith the following specific conditions :-

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- II. Copy of approved mine plan should be submitted at the time of submitting the final EIA for consideration for grant of Environmental Clearance. The mine plan must be approved as per directive of Deptt. of Mines & Geology, Govt. of Jharkhand issued vide letter no. 2078A, dated 27.09.2014.



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Day 3 : July 25th, 2024 [Thursday]

Consideration of Proposals

1. Proposed Residential Building "Estate Sky Vue" of M/s Estate Buildcon, Village : Bargain, Tehsil : Bargain, Distt. : Ranchi, Jharkhand.

(Proposal no.: SIA/JH/INFRA2/480193/2024)

Project Category: B2- 8(a) Building and Construction Projects – Application for Environment Clearance (EC) as per EIA notification, 2006.

Name of the consultant: P & M SOLUTION, Noida, U.P.

This is a new project which has been taken for appraisal on 25.07.2024.

EC Application for: Proposed Residential Project "Estate Sky Vue" located in Ranchi of at Khata No. 68, R. S. Plot No. 2582 & 2584, Khata No. 26, R. S. Plot No. 2575, 2576 & 2577, of M/s Estate Buildcon: Total built-up area 48128.42 sq m.

Project and Location Details :

Parameters	Description
Total Plot Area	9294.55 sqm (0.92 ha/2.29 acres)
Road Widening Area	266.70 sqm
Net Plot Area	9027.85 sq.m
Project Cost	INR 98.60 Crores
Built-up Area (@3.44 F.A.R)	48128.42 sq. m.
Green Area (@ 38.45% of plot area)	3573.45 sq m
Population	1416 nos.
Domestic Water Requirement	133 KLD
Fresh Water Requirement	93 KLD
Wastewater Generation	115 KLD
Treatment facility if waste water	STP of 160 KLD or STP
Total Municipal Waste	681 kg/day
Power Requirement	Maximum power demand for the project during operation phase is estimated to be 2500 kVA respectively. Source of power will be Jharkhand State Electricity Board.

DG Sets	2 nos of DG set (2*250KVA) Total 500 kVA
RWH Pits	4 nos.
Parking Number	362 Nos.
Nearest Road	Bargain Road (approx 0.11 km, E) NH 20 (approx 0.17 km, South)
Nearest Railway Station	Ranchi Junction Railway station (approx 6.17 km, SSW)
Nearest Airport	Birsa Munda Airport (Ranchi), (approx 10.32 km, SSW)
Nearest Hospitals	Freya Women and Child Hospital (approx 0.22 km, SW) Seventh Day Adventist Hospital (approx 0.37 km, ESE)

CO-ORDINATES

Point in image	Latitude	Longitude
A	23° 24'10.20"N	85° 21' 53.97"E
B	23° 24'11.62"N	85°21' 54.14"E
C	23° 24'11.90"N	85°21' 55.30"E
D	23° 24'11.90"N	85°21' 56.35"E
E	23° 24'10.87"N	85°21' 56.38"E
F	23° 24'10.02"N	85°21' 56.50"E
G	23° 24'09.65"N	85°21' 56.72"E
H	23° 24'09.20"N	85°21' 58.84"E
I	23° 24'09.50"N	85°22' 00.33"E
J	23° 24'10.78"N	85°22' 00.54"E
Centre	23° 24'10.49"N	85° 1' 56.98"E

Land Details :

Khata no.	R.S. Plot no.
68	2582 & 2584
26	2575, 2576 & 2577

AREA STATEMENT

S. NO.	DESCRIPTION	AREA (SQ M)
A.	Total plot area	9294.55
B.	Road Widening area	266.70
C.	Net plot area	9027.85
D.	Proposed Ground Coverage (@ 34.94 % of plot area)	3247.84
E.	Proposed FAR (@ 3.44)	32053.80
F.	Non FAR Area (Strain case, Lift, Balcony, Ramp, Accessory Use, 2 Basement Parking)	16074.62
G.	Built-up Area (E+F)	48128.42
H.	Green Area (@38.45% of plot area)	3573.45
I.	Paved area	2355.60
J.	Height (m)	50.09 M
K.	No of Dwelling Units (nos.)	205 nos.

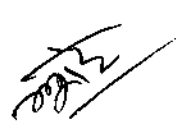
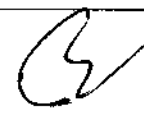
Statutory Clearances :

1	DFO Territorial	: DFO, Ranchi Forest Division vide letter no. 1684, dated 15.05.2024 certified that the distance of reserved / protected forest is more than 250 meters from project site.
2	DFO wildlife	: DFO, Wildlife Division, Ranchi vide letter no. 329, dated 02.05.2024 certified that proposed project site is out side Eco Sensitive Zone of Palkot Wildlife Sanctuary.
3	CO certificate	: The CO, Baragai, Ranchi vide memo no. 428(ii), dated 13.06.2024 has mentioned the plot no. of the project is not recorded as "Jangle Jhari" in R.S. Khatiyani & Register II.
4	AAI NOC	: Airport authority of India issued NOC vide NOC ID no. RANC /EAST /B/ 042624/999769, dated 03.05.2024.
5	Building Plan	: Conceptual Plan submitted.
6	Fire Department	: Fire Advisory has been issued by Fire Department, Jharkhand, Ranchi, vide memo no. 3270/Tech./2024, dated 22.05.2024.
7	Land Docs	: M/s Estate Buildcon has entered in to development agreement with the land owners.

Water Requirement Details

Category	Population/ Area (sq m)/Capacity	Standard (LPCD)	Water Requirement (KLD)	Fresh Water Requirement (KLD)	Recycled Water requirement (KLD)





Domestic					
Residents	1288	100	129	90	39
Staff	64	45	3	2	1
Visitors	64	15	1	0.7	0.3
Total Domestic Water Demand			133	93	40
Landscape	3573.45 sqm	6ltr/sqm	22	-	22
Fire Fighting	-	-	1	-	1
DG cooling	DG Sets of total capacity 500 kVA	0.9 l/kVA/hr	4	-	4
Total		-	160	93	67

(D.G. sets operation period is 8 hrs.)

Wastewater Calculations	
Category	Total Quantity (KLD)
Domestic(fresh) water Req.	93
Flushing water Req.	41
Sewage generation (@80% of the Domestic + 100% flushing water requirement)	115
Capacity of STP	160
Recovered water from STP (90% of Waste water)	104
1. Flushing	40
2. Landscaping	22
3. Fire Fighting	1
4. DG cooling	4
5. Road wash/ Car wash/ Sewer	37

Solid Waste Requirement

S. No	Description	Occupancy/Area	kg/capita/day	Total Solid Waste Generation (kg/day)	Recyclable (kg/day)	Non-Recyclable (kg/day)
1.	Residents	1288	0.5	644	451	193
2.	Staff	64	0.25	16	11	5
3.	Visitors	64	0.15	10	7	3
4.	Landscape waste	0.88 acres	0.2 kg/acres	1	1	-
5.	STP sludge	150 KLD	--	10	10	-
Total Waste Generated				681	480	201

ENVIRONMENT MANAGEMENT

Green Belt Development

- Combination of local trees and shrubs are planned within the project site.

- Total green area provided at the site is 3573.45 sq m (38.45 % of the plot area) which will enhance the beauty of the site and help combat air and noise pollution.
- The plant species will be selected on the basis of Guidelines for Developing Green Belts, CPCB March 2000.

Solid Waste Management

During Construction Phase

- Construction yards are proposed for storage of construction material.
- Excavated top soil will be stored in temporary constructed soil bank and will be reused for landscaping of the project.
- Remaining soil will be utilized for refilling/road work/raising of site level at locations.
- There will be "Refuse Containers" at site for the management of domestic waste generated by the construction labourers and these containers will be emptied at least once daily.
- Cement bags, waste paper and packing material (cardboard) will be sold off to recyclers.

During Operation Phase

- The solid waste will be segregated at source & collected.
- Adequate number of colored bins (green, white & Black) separate for bio-degradable, non-biodegradable and Hazardous waste are proposed to be provided at the strategic location within site.
- Bio-degradable (will be composted through organic waste converter).
- Recyclable wastes will be disposed to govt. or SPCB approved third party vendors.
- Dewatered sludge can be buried underground in a sanitary landfill. It also may be spread on agricultural land in order to make use of its value as a soil conditioner and fertilizer.
- The Hazardous waste generated will be managed as per the Hazardous and Other Wastes (Management and Trans boundary Movement) Rules, 2016.
- Horticultural Waste is composted and used for gardening purposes.

Water Quality Management

During Construction Phase

- The site drainage will be planned in such a way that there is no accumulation of water/wastewater within the project premises or in the vicinity of the site.
- Mobile toilets to be provided for construction Laborers.
- Generated waste water will be collected through tankers and dispose to septic tank for treatment.

During Operation Phase

- STP of capacity i.e. 160 KLD or STP (sewage treatment plant facility of Ranchi Smart City) is proposed for treatment of wastewater.
- Treated waste water would be reused for Flushing, Landscaping, Road Washing & Misc
- Use of water efficient plumbing fixtures to conserve water.
- Approx. 93 KLD of fresh water is required during operational phase of the project.

Air Quality Management

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- Warehouse/stock yard will be provided for storage of construction material
- Covering of stored construction materials with tarpaulin covers which will be resold to authorized construction material handling agency for reuse.
- Covering of trucks carrying construction materials.
- Dust suppression by water sprinkling.
- Adequate maintenance of construction equipment & vehicles.
- Wheel wash facility at the entry/exit of the site to prevent dust emissions.
- Periodical Ambient Air Quality Monitoring.
- PUC Certified vehicles.
- Glow signs Speed Limits to 20 kmph to reduce emissions on site will be displayed at the important junctions.

Energy conservation

- Energy will be conserved via solar power & LED of at least 10% of the total power requirement.

EMP budget for Operational Phase

S. No.	Activity	Capacity/ Area/Nos./parameters	Capital Cost (Lacs)	Annual Recurring Cost (Lacs)
1.	STP	160 KLD	35	4
2.	Landscaping & planting trees	3573.45 sq m	25	4
3.	Solid waste Management	Municipal waste-681 kg/day	18	3
4.	RWH Pit Installation	4 pits	12	1
5.	Energy Saving	10%	40	4
6.	Environmental Monitoring*	Air, water, soil and noise	2	2
Total			132	18

Undertaking

- An affidavit stating that no construction works.
- An undertaking that 115 KLD recycles waste water generated at Residential Project "Estate Sky Vue" of M/s Estate Buildcon located at Ranchi City at Khata No. 68, R. S. Plot No. 2582 & 2584, Khata No. 26, R. S. Plot No. 2575, 2576 & 2577, Ward No. 4, Thana No. 184, P. S. Sadar, Mauza – Bargain, Village – Bargain, Distt. Ranchi, Jharkhand.
- An undertaking that 2500 kVA Power requirement in Residential Project "Estate Sky Vue" of M/s Estate Buildcon located at Ranchi City at Khata No. 68, R. S. Plot No. 2582 & 2584, Khata No. 26, R. S. Plot No. 2575, 2576 & 2577, Ward No. 4, Thana No. 184, P. S. Sadar, Mauza – Bargain, Village – Bargain, Distt. Ranchi, Jharkhand.

Based on the presentation made and information provided, the Committee decided that the proposal for Proposed Residential Building "Estate Sky Vue" of M/s Estate Buildcon, Village : Bargain, Tehsil : Bargain, Distt. : Ranchi, Jharkhand is recommended for grant of

EC. The various conditions for grant of EC is enclosed as Annexure –I alongwith the following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "*Ek Ped Ma Ke Naam*" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- II. Ground water to be drawn for use in the project only after obtaining permission from the Competent Authority.
- III. Environment management system including organization structure to be drawn to ensure compliance of EC conditions stipulated based on principles of Continual Improvement and periodical management review.
- IV. All raw material to be stored only under covered shed.
- V. PAs to offset (upto20%) consumption of conventional energy sources by promoting use of solar energy, passive energy utilization, optimum fenestration, shading effect and heat islands.
- VI. Developers to promote energy conservation measures such that it offsets not less than 02 % of connected load. It is to be achieved by solar panels etc meeting ECBC norms.
- VII. Trees should be developed & maintained not less than 15% of project area.
- VIII. Organic Waste Converter (OWC) to be installed of sufficient capacity such that all organic waste (bio degradable) generated is composted at source only.
- IX. Developers/Company to install STP of sufficient capacity such that all the sewer produced is treated and reused.
- X. Developers/Company to install Rain water harvesting structures such that all the roof top water runoff is collected and harvested including reuse on 100% basis.
- XI. Developers/Company to conduct and submit carbon footprint and carbon sequestration study report including mitigation measures as a part of EC compliance.
- XII. Water runoff originating from open non constructed areas of project premises to be harvested /guided in such a way that it does not create water logging condition outside.
- XIII. Sufficient number of EV fast charging points to be installed.
- XIV. MSW Collection centre should be located in isolated and preferably unmanned area. Movement of the vehicle carrying waste should be under tarpaulin covered condition only. Route of vehicle should be such that it avoids residential areas as far as practical.
- XV. ISO 14k EMS system standard to be followed for implementation of EMPs with MRM in place for feedback to Sr management.

- XVI. A cycling tract to be provided in residential complex so as to save on fuel and make in campus movement environment friendly.

2. Expansion of Commercial Project Ranchi Smart City Plot no. 65 of M/s Malti Residency Infra Projects Private Limited, Village : Kachnartoli, Block : Namkum, Tehsil : Namkuma, Distt. : Ranchi, Jharkhand.

(Proposal No. : SIA/JH/INFRA2/488644 /2024)

Name of the consultant : P & M Solution, Noida, Uttar Pradesh.

This is an expansion project which has been taken for appraisal on 25.07.2024.

Project Category : B2- 8(a) Building & Construction project – Application for Environment Clearance (EC) as per EIA notification, 2006.

EC Application for: Expansion of Commercial project Ranchi Smart City plot 65.

Total built-up area 34037.41 sq m (Existing= 24043.25 sq m & Proposed=9994.16 sq m).

Project and Location Details:

Parameters	Description
Total Plot Area	7682.25 sq.m (0.77 ha/1.9 acres)
Project Cost	INR 49.17 corers (Existing = INR 34.73 Cr. & Proposed =INR 14.44 Cr.)
Built-up Area (@3.44 F.A.R)	34037.41 sq m (Existing= 24043.25 sq m & Proposed=9994.16 sq m)
Green Area (@ 38.45% of plot area)	1158.72 sqm
Population	2608 nos.
Domestic Water Requirement	120 KLD
Fresh Water Requirement	65 KLD
Wastewater Generation	90 KLD
Treatment facility if waste water	STP of 95 KLD or STP (sewage treatment plant facility of Ranchi Smart City)
Total Municipal Waste	312 kg/day

Power Requirement	Maximum power demand for the project during operation phase is estimated to be 2020 kVA respectively. Source of power will be Jharkhand State Electricity Board.
DG Sets	2 nos of DG set (2*1010 KVA) Total 2020 kVA
RWH Pits	2 nos.
Parking Number	1104 Nos. (Existing = 602 Nos Proposed= 502 Nos.)
Nearest Road	NH 39 (4.07 km, SW) SH2 (15 km, N)
Nearest Railway Station	Ranchi Junction Railway station (approx 6.33 km, NE)
Nearest Airport	Birsa Munda Airport (Ranchi), (approx 2.89 km, NE)
Nearest Hospitals	HEC plant Hospital (2.47 km, NW) Shree Super speciality Hospital (1 km, NW)

CO-ORDINATES

Point	Latitude	Longitude
A	23°17'56.22"N	85°18'15.25"E
B	23°17'56.22" N	85°18'13.61"E
C	23°18'01.23"N	85°18'13.64"E
D	23°18'01.50"N	85°18'13.97"E
E	23°18'01.50"N	85°18'15.31"E

LAND DETAILS

Khata No.	Plot No.
83	36, 42 & 168
78	37, 38, 39, 44 & 163
69	40 & 41
20	43 & 161
24	162

STATEMENT

S No.	Description	Area (Sq m) as per Previous EC (Sq m/Nos.)	Area (Sq m) as per expansion Basement area (Sq m/Nos.)	Total (Sq m/Nos.)
I.	Total Plot area		7682.25	
II.	Proposed Ground Coverage (@49.98 % of		3839.92	

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	plot area)			
III.	Permissible FAR @3	23046.75		
IV.	Proposed FAR @ 2.985	22932.33	--	22932.33
V.	Non FAR	1110.92	--	1110.92
VI.	Basement area	--	9994.16	9994.16
VII.	Built-Up area	24043.25	9994.16	34037.41
VIII.	Green Area (15.08 % of the plot area)	1158.72		
IX.	Height (m)	36.30 m		

STATUTORY CLEARANCES

1	DFO Territorial	:	DFO, Ranchi Forests division vide letter no. 4273 dated 22.12.2018 certified that the distance of reserved/protected forest is more than 250 m from project site.
2	DFO wildlife	:	DFO, Wildlife Ranchi division vide letter no. 63, dated 20.01.2023 certified that proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary.
3	CO certificate	:	The CO, Namkum (Ranchi) vide vide letter no. 29(ii) dated 07.01.2019 has mentioned the plot no. of the project is not recorded as "Jungal - Jhari" in Khatiyon.
4	AAI NOC	:	Airport authority of India issued NOC vide NOC ID no. RANC/EAST /B/061923/763927, dated 28.07.2023 valid up to 27.07.2031.
5	Fire Department	:	Fire Advisory has been issued by Fire Department, Jharkhand, Ranchi, vide memo no. 4296/Tech./2024, dated 04.07.2024.
6	Building Plan	:	Conceptual Plan submitted.
7	Previous Environmental Clearance (EC)	:	Previous EC granted by SEIAA, Jharkhand vide letter no. EC/SEIAA/2022-23/2747/2023/441, dated 21.03.2023.
8	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-16091564/2023/477, dated 13.08.2023.
9	Land Docs	:	Land allotted from Ranchi Smart City Corporation Ltd. dated 18.07.2022.

Water Requirement Details

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S. No.	Description	Area/No of Rooms	Total Population	Dom Water Requirement			Flushing Water requirement			Gross Water Req. (C)=(A +B) LPD	Flow to Sewer (80% DOM +100% FLUSHING) LPD
				LPCD	LPD (A)	Flow to Sewer in percent	LPCD	LPD (B)	Flow to Sewer in percent		
DAILY WATER DEMAND											
GROUND FLOOR											
1	Anchor	896	299								
a)	Floating Popuation	90% Total population	269	5	1,345	80	10	2,690	100	4,035	3,766
b)	Fixed Popuation	10% Total population	30	25	750	80	20	600	100	1,350	1,200
2	Shops	1,399	467								
a)	Floating Popuation	90% Total population	420	5	2,100	80	10	4,200	100	6,300	5,880
b)	Fixed Popuation	10% Total population	47	25	1,175	80	20	940	100	2,115	1,880
	Total				5,370			8,430		13,800	12,726
FIRST FLOOR											
1	Retail, Anchor	885	148								
a)	Floating Population	90% Total population	133	5	665	80	10	1,330	100	1,995	1,862
b)	Fixed Population	10% Total population	15	25	375	80	20	300	100	675	600
2	Retail	1,387	232								
a)	Floating Population	90% Total population	209	5	1,045	80	10	2,090	100	3,135	2,926
b)	Fixed Population	10% Total population	23	25	575	80	20	460	100	1,035	920
	Total				2,660			4,180		6,840	6,308
SECOND FLOOR											
1	Retail, Anchor	885	148								

a)	Floating Population	90% Total population	133	5	665	80	10	1,330	100	1,995	1,862
b)	Fixed Population	10% Total population	15	25	375	80	20	300	100	675	600
2	Retail	1,387	232								
a)	Floating Population	90% Total population	209	5	1,045	80	10	2,090	100	3,135	2,926
b)	Fixed Population	10% Total population	23	25	575	80	20	460	100	1,035	920
	Total				2,660			4,180		6,840	6,308

THIRD FLOOR

1	Office	2,056	317								
a)	Floating Population	10% Total population	32	5	160	80	10	320	100	480	448
b)	Fixed Population	90% Total population	285	25	7,125	80	20	5,700	100	12,825	11,400
	Total				7,285			6,020		13,305	11,848

FOURTH FLOOR

1	Office	2,056	317								
a)	Floating Population	10% Total population	32	5	160	80	10	320	100	480	448
b)	Fixed Population	90% Total population	285	25	7,125	80	20	5,700	100	12,825	11,400
	Total				7,285			6,020		13,305	11,848

FIFTH FLOOR

1	Spa	110	11	90	990	80	45	495	100	1,485	1,287
2	Gymnasium	86	14	25	350	80	20	280	100	630	560
3	Business Lounge	235	24	25	600	80	20	480	100	1,080	960
4	Pre Function Area	55	6								
a)	Floating Population	90% Total population	5	5	25	80	10	50	100	75	70
b)	Fixed Population	10% Total population	1	25	25	80	20	20	100	45	40

5	Bar/Restaurant	142	15	55	825	80	15	225	100	1,050	885
6	Lawn (Party Area)	408	41								
a)	Floating Population	90% Total population	37	5	185	80	10	370	100	555	518
b)	Fixed Population	10% Total population	4	25	100	80	20	80	100	180	160
7	Party Hall	197	110								
a)	Floating Population	90% Total population	99	5	495	80	10	990	100	1,485	1,386
b)	Fixed Population	10% Total population	11	25	275	80	20	220	100	495	440
	Total				3,870			3,210		7,080	6,306

6TH FLOOR - 8TH FLOOR

1	Hotel Room	105	210	120	25,200	80	60	12,600	100	37,800	32,760
2	Maids Room	0	0	90	0	80	45	0	100	0	0
	Total				25,200			12,600		37,800	32,760

1. landscape area confirmed by landscape consultant.

MISCELLANEOUS

1	Mainlains staff		50	25	1,250	80	20	1,000	100	2,250	2,000
2	Swimming Pool	-	-	-	9,180	-	-	-	-	9,180	-
3	Landscape (SQ.MTRS)	1187	1187	0	0	0	8	9,496	-	9,496	-
	Total				10,430			10,496		20,926	2,000

TOTAL DAILY WATER DEMAND

1	Domestic Fresh Water Demand (Including Swimming Pool)	64,760	Liters		65	KLD
2	Recycle Water Demand (Flushing + landscaping)	55,136	Liters		55	KLD
	Total Water Demand	119,896	Liters		120	KLD

WASTEWATER CALCULATIONS

1	FLOW TO SEWER	90104	Liters	say	90	KLD
2	STP CAPACITY				95	KLD

(D.G. sets operation period is 8 hrs.)

Wastewater Calculations

Recovered water from STP (90% of Waste water)	81
1. Flushing	45
	10
2. Landscaping	1
	14
3. Fire Fighting	11
4. DG cooling	
5. road washing/sewer	

Solid Waste Requirement

DESIGN CONSIDERATIONS	Waste Generation per person for Commercial	0.1	kg/day	
	Waste Generation per person for Residential	0.35	kg/day	
	Dry Garbage	60%	of Total Waste Generated	
	Wet Garbage	40%	of Total Waste Generated	
S. No.	Description	Area	Total Population	Total Waste Generated
Ground Floor				
1	Anchor	896	299	29.87
2	Shops	1,399	467	46.70
			TOTAL	76.57
First Floor				
1	Retail, Anchor	885	148	14.80
2	Retail	1,387	232	23.20
			TOTAL	38.00
Second Floor				
1	Retail, Anchor	885	148	14.80
2	Retail	1,387	232	23.20
			TOTAL	38.00
Third Floor				

1	Office	2,056	317	31.70
			TOTAL	31.70
Fourth Floor				
1	Office	2,056	317	31.70
			TOTAL	31.70
Fifth Floor				
1	Spa	110	11	1.10
2	Gymnasium	86	14	1.40
3	Business Lounge	235	24	2.40
4	Pre Function Area	55	6	0.60
5	Bar/Restaurant	142	15	1.50
6	Lawn (Party Area)	408	41	4.10
7	Party Hall	197	110	11.00
			TOTAL	22.1
6th Floor- 8th Floor				
1	Hotel Room	105	210	73.50
2	Maids Room	0	0	0.00
			TOTAL	73.50
GRAND TOTAL				312
1	Total Garbage Generated		=	311.566666666667 KG/DAY
2	Total Dry Garbage Generated		=	186.6 KG/DAY
3	Total Wet Garbage Generated		=	124.4 KG/DAY
OWC DETAILS				
Organic Waste Composter selected				
Biodegradable Waste to be treated				124.4 KG/DAY

ENVIRONMENT MANAGEMENT

Green Belt Development

- Combination of local trees and shrubs are planned within the project site.
- Total green area provided at the site is 1158.72sq m (15.08 % of the plot area) which will enhance the beauty of the site and help combat air and noise pollution.
- The plant species will be selected on the basis of Guidelines for Developing Green Belts, CPCB March 2000.

Solid Waste Management

During Construction Phase

- Construction yards are proposed for storage of construction material.
- Excavated top soil will be stored in temporary constructed soil bank and will be reused for landscaping of the project.

- Remaining soil will be utilized for refilling/road work/raising of site level at locations.
- There will be "Refuse Containers" at site for the management of domestic waste generated by the construction labourers and these containers will be emptied at least once daily.
- Cement bags, waste paper and packing material (cardboard) will be sold off to recyclers.

During Operation Phase

- The solid waste will be segregated at source & collected.
- Adequate number of colored bins (green, white & Black) separate for bio-degradable, non-biodegradable and Hazardous waste are proposed to be provided at the strategic location within site.
- Bio-degradable (will be composted through organic waste converter).
- Recyclable wastes will be disposed to govt. or SPCB approved third party vendors.
- Dewatered sludge can be buried underground in a sanitary landfill. It also may be spread on agricultural land in order to make use of its value as a soil conditioner and fertilizer.
- The Hazardous waste generated will be managed as per the Hazardous and Other Wastes (Management and Trans boundary Movement) Rules, 2016.
- Horticultural Waste is composted and used for gardening purposes.

Water Quality Management

During Construction Phase

- The site drainage will be planned in such a way that there is no accumulation of water/wastewater within the project premises or in the vicinity of the site.
- Mobile toilets to be provided for construction Laborers.
- Generated waste water will be collected through tankers and dispose to septic tank for treatment.

During Operation Phase

- STP of capacity i.e. 95 KLD or STP (sewage treatment plant facility of Ranchi Smart City) is proposed for treatment of wastewater.
- Treated waste water would be reused for Flushing, Landscaping, Road Washing & Misc
- Use of water efficient plumbing fixtures to conserve water.
- Approx. 65 KLD of fresh water is required during operational phase of the project.

Air Quality Management

- Warehouse/stock yard will be provided for storage of construction material
- Covering of stored construction materials with tarpaulin covers which will be resold to authorized construction material handling agency for reuse.
- Covering of trucks carrying construction materials.

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- Dust suppression by water sprinkling.
- Adequate maintenance of construction equipment & vehicles.
- Wheel wash facility at the entry/exit of the site to prevent dust emissions.
- Periodical Ambient Air Quality Monitoring.
- PUC Certified vehicles.
- Glow signs Speed Limits to 20 kmph to reduce emissions on site will be displayed at the important junctions.

Energy conservation

- Energy will be conserved via solar power & LED of at least 10% of the total power requirement.

EMP budget for Operational Phase

S. No.	Activity	Capacity/ Area/Nos./parameters	Capital Cost (Lacs)	Annual Recurring Cost (Lacs)
1.	STP	95 KLD	20	8
2.	Landscaping & planting trees	1158.72sq m	10	5
3.	Solid waste Management	Municipal waste-312 kg/day	15	10
4.	RWH Pit Installation	2 pits	10	3
5.	Energy Saving	10%	10	4
6.	Environmental Monitoring*	Air, water, soil and noise	-	4
Total			65	34

Undertaking

- An affidavit stating that no construction works.
- An undertaking that 90 KLD recycles waste water generated at Expansion of Commercial project Ranchi Smart City plot 65 of M/s Malti Residency Infra Projects Private Limited located at Khata no – 83,78,78,78, 69,69,83,20,78,20,24,78,83 Plot No –36,37,38,39,40,41,42,43,44,161,162,163,168 Village-Kachnartoli, Block – Namkum, District-Ranchi, State-Jharkhand.
- An undertaking that 2020 kVA Power requirement in • Expansion of Commercial project Ranchi Smart City plot 65 of M/s Malti Residency Infra Projects Private Limited

located at Khata no – 83,78,78,78, 69,69,83,20,78,20,24,78,83 Plot No – 36,37,38,39,40,41,42,43,44,161,162,163,168 Village-Kachnartoli, Block – Namkum, District-Ranchi, State-Jharkhand.

Based on the presentation made and information provided, the Committee decided that the proposal for Expansion of Commercial Project Ranchi Smart City Plot no. 65 of M/s Malti Residency Infra Projects Private Limited, Village : Kachnartoli, Block : Namkum, Tehsil : Namkuma, Distt. : Ranchi, Jharkhand is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure –I alongwith the following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign “*Ek Ped Ma Ke Naam*” and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- II. Ground water to be drawn for use in the project only after obtaining permission from the Competent Authority.
- III. Environment management system including organization structure to be drawn to ensure compliance of EC conditions stipulated based on principles of Continual Improvement and periodical management review.
- IV. All raw material to be stored only under covered shed.
- V. PAs to offset (upto20%) consumption of conventional energy sources by promoting use of solar energy, passive energy utilization, optimum fenestration, shading effect and heat islands.
- VI. Developers to promote energy conservation measures such that it offsets not less than 02 % of connected load. It is to be achieved by solar panels etc meeting ECBC norms.
- VII. Trees should be developed & maintained not less than 15% of project area.
- VIII. Organic Waste Converter (OWC) to be installed of sufficient capacity such that all organic waste (bio degradable) generated is composted at source only.
- IX. Developers/Company to install STP of sufficient capacity such that all the sewer produced is treated and reused.
- X. Developers/Company to install Rain water harvesting structures such that all the roof top water runoff is collected and harvested including reuse on 100% basis.
- XI. Developers/Company to conduct and submit carbon footprint and carbon sequestration study report including mitigation measures as a part of EC compliance.
- XII. Water runoff originating from open non constructed areas of project premises to be harvested /guided in such a way that it does not create water logging condition outside.

- XIII. Sufficient number of EV fast charging points to be installed.
- XIV. MSW Collection centre should be located in isolated and preferably unmanned area. Movement of the vehicle carrying waste should be under tarpaulin covered condition only. Route of vehicle should be such that it avoids residential areas as far as practical.
- XV. ISO 14k EMS system standard to be followed for implementation of EMPs with MRM in place for feedback to Sr management.
- XVI. A cycling tract to be provided in residential complex so as to save on fuel and make in campus movement environment friendly.

3. Expansion of Residential Project Ranchi Smart City Plot no. 17 of M/s Malti Residency Infra Projects Private Limited, Mouza : Latma, Block : Namkum, Distt. : Ranchi, Jharkhand.

(Proposal No. : SIA/JH/INFRA2/488796 /2024)

Name of the consultant : P & M Solution, Noida, Uttar Pradesh.

This is an expansion project which has been taken for appraisal on 25.07.2024.

Project Category : B2- 8(a) Building & Construction project – Application for Environment Clearance (EC) as per EIA notification, 2006.

EC Application for: Expansion of Residential project Ranchi Smart City plot 17 located at Mauza – Latma, Block – Namkum, District-Ranchi, State-Jharkhand by M/s Malti Residency Infra Projects Private Limited.

Total built-up area 136137.59 sqm (Existing= 117631.14 Sq.m & Proposed = 18506.45 sq m).

Project and Location Details:

Parameters	Description
Total Plot Area	22153.96 sq m (2.21ha/5.47acres)
Project Cost	INR 185 Corers (Existing= 176 Corers & Proposed 9 Corers)
Built-up Area (@3.44 F.A.R)	136137.59 sqm (Existing= 117631.14 Sq.m & Proposed = 18506.45 sq m)
Green Area (@ 38.45% of plot area)	4380.80 sq m
Population	5278 nos.

Domestic Water Requirement	450 KLD
Fresh Water Requirement	403 KLD
Wastewater Generation	544 KLD
Treatment facility if waste water	STP of 550 KLD or STP (sewage treatment plant facility of Ranchi Smart City)
Total Municipal Waste	1560.1 kg/day
Power Requirement	Maximum power demand for the project during operation phase is estimated to be 3917.88 kVA respectively. Source of power will be Jharkhand State Electricity Board.
DG Sets	DG set 1010 kVA
RWH Pits	10 nos.
Parking Number	871 Nos.
Nearest Road	NH 39 (3.38 km, SW) SH2 (15 km, N)
Nearest Railway Station	Ranchi Junction Railway station (approx 7.20 km, NF)
Nearest Airport	Birsa Munda Airport (Ranchi), (approx 3.86 km, NE)
Nearest Hospitals	HEC plant Hospital (2.47 km, NW)

CO-ORDINATES

Point	Latitude	Longitude
A	23°17'45.41"N	85°17'42.13"E
B	23°17'44.18"N	85°17'41.32"E
C	23°17'43.64"N	85°17'40.83 "E
D	23°17'43.12"N	85°17'37.43"E
E	23°17'42.11"N	85°17'37.43"E
F	23°17'42.24"N	85°17'41.72"E
G	23°17'41.31"N	85°17'49.15"E
H	23°17'41.74"N	85°17'49.14"E
I	23°17'45.96"N	85°17'43.48"E
J	23°17'46.20"N	85°17'42.97"E








LAND DETAILS

Khata no.	Plot no.
109, 37, 13, 81, 44, 103, 16, 129, 100, 51, 44, 6, 74, 107, 17, 13, 40, 107, 95 & 135	1006, 1007, 1008, 1011, 1012, 1013, 1021, 1022, 1023, 1024, 1025, 1026, 1027, 1028, 1099, 1101, 1103, 1104, 1105, 1106, 1107 & 1108

AREA STATEMENT

S. NO.	Description	As per previous EC Area (sq m)/nos	Expansion Area (Sq m)/Nos	Total
	Total plot area		22153.96	
	Proposed Ground Coverage (@ 49.79 % of plot area)		11030.46	
	Proposed FAR (@4)	89880.07	30787.55	120667.62
	Non FAR Area (Strain case, Lift, Balcony, Ramp, Accessory Use, Basement Parking)	27751.07	12281.1	15469.97
	Built-up Area (F+G)	117631.14	18506.45	136137.59
	Green Area (@19.77 % of plot area)		4380.80	
	Road Area(25.14 % of the plot area)		5569	
	Paved Area (5.32 % of plot area)		1178.97	
	Height (m)		55 m	
	No of Dwelling Units	670	13	683

STATUTORY CLEARANCES

1	DFO Territorial	:	DFO, Ranchi Forest division vide letter no. 4273 dated 22.12.2018 certified that the distance of reserved/protected forest is more than 250 m from project site.
2	DFO wildlife	:	DFO, Wildlife Ranchi division vide letter no. 63, dated 20.01.2023 certified that proposed project site is outside Eco Sensitive Zone of Palkot Wildlife Sanctuary. This being expansion in an existing project no fresh certificate is required from DFO Wildlife Division, Ranchi.
3	CO certificate	:	The CO, Namkum (Ranchi) vide vide letter no. 29(ii) dated 07.01.2019 has mentioned the plot no. of the project is not recorded as "Jungal - Jhari" in Khatiyani.
4	AAI NOC	:	Airport authority of India issued NOC vide NOC ID no. RANC/EAST/B/022323/743655, dated 20.04.2023 valid up to 19.04.2031.
5	Fire Department	:	Fire Advisory has been issued by Fire Department, Jharkhand,

		:	Ranchi, vide memo no. 2262/Tech./2024, dated 30.03.2024.
6	Building Plan	:	Conceptual Plan submitted.
7	Previous Environmental Clearance (EC)	:	Previous EC granted by SEIAA, Jharkhand vide letter no. EC/SEIAA/2022-23/2746/2023/442, dated 21.03.2023.
8	Consent to Establish (CTE)	:	CTE issued by JSPCB vide Ref. no. JSPCB/HO/RNC/CTE-16091607/2023/478, dated 13.08.2023.
9	Land Docs	:	Land allotted from Ranchi Smart City Corporation Ltd. dated 23.11.2022.

Water Requirement Details

S. No.	Description	Number of Flats	Total Population	Dom Water Requirement		Flushing Water requirement		Gross Water Req.	% Flow to Sewer	Flow to Sewer
				LPCD	LPD	LPCD	LPD	LPD	%	LPD
EWS & LIG (STILT+ 9FLOORS)										
1	1 BHK	85.00	340	90	30,600	45	15,300	45,900	80/100	39,780.0
2	2 BHK	102.00	510	90	45,900	45	22,950	68,850	80/100	59,670.0
	Total		850		76,500		38,250	114,750		99,450
WING 1 - 1ST To 13TH FLOOR + 14TH & 15TH FLOOR (DUPLEX)										
1	4 BHK	56	392	90	35,280	45	17,640	52,920	80/100	45,864
2	5 BHK	2	14	90	1,260	45	630	1,890	80/100	1,638
3	SERVANT ROOM	56	56	25	1,400	20	1,120	2,520	80/100	2,240
	Total		462		37,940		19,390	57,330		49,742
WING 2 - 1ST To 13TH FLOOR + 14TH & 15TH FLOOR (DUPLEX)										
1	4 BHK	56	392	90	35,280	45	17,640	52,920	80/100	45,864
2	5 BHK	2	14	90	1,260	45	630	1,890	80/100	1,638
3	SERVANT ROOM	56	56	25	1,400	20	1,120	2,520	80/100	2,240
	Total		462		37,940		19,390	57,330		49,742
WING 3 - 1ST To 13TH FLOOR + 14TH & 15TH FLOOR (DUPLEX)										
1	3 BHK	101	606	90	54,540	45	27,270	81,810	80/100	70,902
2	4 BHK	15	105	90	9,450	45	4,725	14,175	80/100	12,285
3	5 BHK	2	14	90	1,260	45	630	1,890	80/100	1,638
4	SERVANT ROOM	56	56	25	1,400	20	1,120	2,520	80/100	2,240
	Total		781		66,650		33,745	100,395		87,065

WING 4 - 1ST To 13TH FLOOR + 14TH & 15TH FLOOR (DUPLEX)										
1	3 BHK	71	426	90	38,340	45	19,170	57,510	80/100	49,842
2	4 BHK	45	315	90	28,350	45	14,175	42,525	80/100	36,855
3	5 BHK	2	14	90	1,260	45	630	1,890	80/100	1,638
4	SERVANT ROOM	56	56	25	1,400	20	1,120	2,520	80/100	2,240
	Total		811		69,350		35,095	104,445		90,575
WING 5 - 1ST To 13TH FLOOR + 14TH & 15TH FLOOR (DUPLEX)										
1	3 BHK	112	672	90	60,480	45	30,240	90,720	80/100	78,624
2	4 BHK	15	105	90	9,450	45	4,725	14,175	80/100	12,285
3	5 BHK	4	28	90	2,520	45	1,260	3,780	80/100	3,276
4	SERVANT ROOM	70	70	25	1,750	20	1,400	3,150	80/100	2,800
	Total		875		74,200		37,625	111,825		96,985
MISCELLANEOUS										
1	Landscape (SQ.MTRS)	4,380.00	4,380			6	26,280	26,280		0.00
2	Clubhouse	0.00	0	20.00	0	25	0		80/100	
3	Swimming Pool	650.00	780	0.05	39,000			39,000		
4	Community Hall	525.00	53	20	1,050	25	1,313	2,363	80/100	2,153
5	Gaming	500.00	357	20	7,143	25	8,929	16,071	80/100	14,643
6	SPA	250.00	179	90	16,071	45	8,036	24,107	80/100	20,893
7	GYM	325.00	232	20	4,643	25	5,804	10,446	80/100	9,518
	Total				67,907		50,360	118,268		47,206
WING F - 1ST To 13TH FLOOR										
1	Typical Floor	36	216	90	19440	45	9720	29160	80/100	23328
	Total				19440		9720	29160		23328
TOTAL WATER DEMAND										
1	Domestic Water Demand (including swimming pool)	449, 927			Liters	say	450		KLD	
2	Flushing Water Demand (Flushing + landscaping)	243, 575			Liters	say	244		KLD	
	Total Water Demand							694		Liters
WASTEWATER CALCULATIONS										
1	FLOW TO SEWER	544, 093			Liters	say	544		KLD	
2	STP CAPACITY				Liters	say	550		KLD	

(D.G. sets operation period is 8 hrs.)

Wastewater Calculations

Recovered water from STP (90% of Waste water)	490
1. Flushing	244
2. Landscaping	27
3. Fire Fighting	1
4. DG cooling	8
5. road washing/sewer	210

Solid Waste Requirement

S. No.	Description	Total No of Flats	Total Population	Total Waste Generated
1	EWS & LIG	187.00	850	297.5
2	WING 1	58.00	462	161.7
3	WING 2	58.00	462	161.7
4	WING 3	118.00	781	273.4
5	WING 4	118.00	811	283.9
6	WING 5	131.00	875	306.3
7	WING F	36.00	216	75.6
1	Total Garbage Generated	=	=	1,560.1
2	Total Dry Garbage Generated	=	=	936.06 KG/DAY
3	Total Wet Garbage Generated	=	=	624.04 KG/DAY

ENVIRONMENT MANAGEMENT

Green Belt Development

- Combination of local trees and shrubs are planned within the project site.
- Total green area provided at the site is 4380.80 sq m (19.77 % of the plot area) which will enhance the beauty of the site and help combat air and noise pollution.
- The plant species will be selected on the basis of Guidelines for Developing Green Belts, CPCB March 2000.

Solid Waste Management

During Construction Phase

- Construction yards are proposed for storage of construction material.
- Excavated top soil will be stored in temporary constructed soil bank and will be reused for landscaping of the project.
- Remaining soil will be utilized for refilling/road work/raising of site level at locations.

- There will be "Refuse Containers" at site for the management of domestic waste generated by the construction labourers and these containers will be emptied at least once daily.
- Cement bags, waste paper and packing material (cardboard) will be sold off to recyclers.

During Operation Phase

- The solid waste will be segregated at source & collected.
- Adequate number of colored bins (green, white & Black) separate for bio-degradable, non-biodegradable and Hazardous waste are proposed to be provided at the strategic location within site.
- Bio-degradable (will be composted through organic waste converter).
- Recyclable wastes will be disposed to govt. or SPCB approved third party vendors.
- Dewatered sludge can be buried underground in a sanitary landfill. It also may be spread on agricultural land in order to make use of its value as a soil conditioner and fertilizer.
- The Hazardous waste generated will be managed as per the Hazardous and Other Wastes (Management and Trans boundary Movement) Rules, 2016.
- Horticultural Waste is composted and used for gardening purposes.

Water Quality Management

During Construction Phase

- The site drainage will be planned in such a way that there is no accumulation of water/wastewater within the project premises or in the vicinity of the site.
- Mobile toilets to be provided for construction Laborers.
- Generated waste water will be collected through tankers and dispose to septic tank for treatment.

During Operation Phase

- STP of capacity i.e. 550 KLD or STP (sewage treatment plant facility of Ranchi Smart City) is proposed for treatment of wastewater.
- Treated waste water would be reused for Flushing, Landscaping, Road Washing & Misc
- Use of water efficient plumbing fixtures to conserve water.
- Approx. 450 KLD of fresh water is required during operational phase of the project.

Air Quality Management

- Warehouse/stock yard will be provided for storage of construction material
- Covering of stored construction materials with tarpaulin covers which will be resold to authorized construction material handling agency for reuse.
- Covering of trucks carrying construction materials.

Handwritten signatures and initials are present at the bottom of the page, including a large signature on the left, the letter 'A' in the center, a signature with '262' written above it, a stylized 'C' or 'G' signature, a signature with a vertical line through it, and another signature on the far right.

- Dust suppression by water sprinkling.
- Adequate maintenance of construction equipment & vehicles.
- Wheel wash facility at the entry/exit of the site to prevent dust emissions.
- Periodical Ambient Air Quality Monitoring.
- PUC Certified vehicles.
- Glow signs Speed Limits to 20 kmph to reduce emissions on site will be displayed at the important junctions.

Energy conservation

- Energy will be conserved via solar power & LED of at least 10% of the total power requirement.

EMP budget for Operational Phase

S. No.	Activity	Capacity/ Area/Nos./parameters	Capital Cost (Lacs)	Annual Recurring Cost (Lacs)
1.	STP	550 KLD	80	40
2.	Landscaping & planting trees	4380.80sq m	30	15
3.	Solid waste Management	Municipal waste-1560.1 kg/day	25	10
4.	RWH Pit Installation	10 pits	10	5
5.	Energy Saving	10%	10	4
6.	Environmental Monitoring*	Air, water, soil and noise	-	4
Total			155	78

Undertaking

- An affidavit stating that no construction works.
- An undertaking that 544 KLD recycles waste water generated at Expansion of Commercial project Ranchi Smart City plot 65 of M/s Malti Residency Infra Projects Private Limited located at Mauza – Latma, Block – Namkum, District-Ranchi, State-Jharkhand.
- An undertaking that 3917.88 kVA Power requirement in Expansion of Residential project Ranchi Smart City plot 17 of M/s Malti Residency Infra Projects Private Limited located at at Mauza – Latma, Block – Namkum, District-Ranchi, State-Jharkhand.

Based on the presentation made and information provided, the Committee decided that the proposal for Expansion of Residential Project Ranchi Smart City Plot no. 17 of M/s Malti

Residency Infra Projects Private Limited, Mouza : Latma, Block : Namkum, Distt. : Ranchi, Jharkhand is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure –I alongwith the following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- II. Ground water to be drawn for use in the project only after obtaining permission from the Competent Authority.
- III. Environment management system including organization structure to be drawn to ensure compliance of EC conditions stipulated based on principles of Continual Improvement and periodical management review.
- IV. All raw material to be stored only under covered shed.
- V. PAs to offset (upto20%) consumption of conventional energy sources by promoting use of solar energy, passive energy utilization, optimum fenestration, shading effect and heat islands.
- VI. Developers to promote energy conservation measures such that it offsets not less than 02 % of connected load. It is to be achieved by solar panels etc meeting ECBC norms.
- VII. Trees should be developed & maintained not less than 15% of project area.
- VIII. Organic Waste Converter (OWC) to be installed of sufficient capacity such that all organic waste (bio degradable) generated is composted at source only.
- IX. Developers/Company to install STP of sufficient capacity such that all the sewer produced is treated and reused.
- X. Developers/Company to install Rain water harvesting structures such that all the roof top water runoff is collected and harvested including reuse on 100% basis.
- XI. Developers/Company to conduct and submit carbon footprint and carbon sequestration study report including mitigation measures as a part of EC compliance.
- XII. Water runoff originating from open non constructed areas of project premises to be harvested /guided in such a way that it does not create water logging condition outside.
- XIII. Sufficient number of EV fast charging points to be installed.
- XIV. MSW Collection centre should be located in isolated and preferably unmanned area. Movement of the vehicle carrying waste should be under tarpaulin covered condition only. Route of vehicle should be such that it avoids residential areas as far as practical.

- XV. ISO 14k EMS system standard to be followed for implementation of EMPs with MRM in place for feedback to Sr management.
- XVI. A cycling tract to be provided in residential complex so as to save on fuel and make in campus movement environment friendly.

4. Ulidihi Stone Deposit of M/s Sai Resources Pvt. Ltd., Village : Ulidihi, Circle : Rajnagar, Distt.: Saraikela-Kharsawan, Jharkhand (1.48 Ha).

(Proposal no.: SIA/JH/MIN/488005/2024)

Name of the consultant : P & M Solution, Noida, U.P.

This is a new project which has been taken for appraisal on 25.07.2024.

Project Category : B2 – 1(a) Mining of Minerals : Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 22638.00 cum/annum or 61122.60 TPA

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Ulidihi Stone Deposit (Area- 1.48 ha. or 3.66 Acres)
2	Lessee:	: M/s Sai Resources Pvt. Ltd. At-Village- Dugdha, PO-Gamharia, District- Saraikela Kharsawan, Jharkhand
3	Lease Address	: Village – Ulidihi, Circle- Rajnagar, District – Saraikela- Kharsawan, State- Jharkhand
4	Lease Area	: 1.48ha. Acres-.3.66 Acres
5	Type of Land	: Non-Forest (Raiyati Land)
6	Project Cost	: Rs. 40 Lakhs
7	EMP Budget	: Capital: 12.54 Lakhs Recurring: 4.27 Lakhs / year
8	New or Expansion	: New
9	Mineable Reserves	: 111940.5 cum or 302239.35 tons
10	Mine Life	: 4.11 years
11	Man power	: 17
12	Water Requirement	: 9.681 ~ 9.70 KLD (Drinking: 0.17 KLD, Dust Suppression: 4.895 KLD, Plantation: 4.616 KLD)
13	Water Source	: From Nearby villages by tankers
14	DG Set / power	: 200 KVA

15	Crusher	:	No Crusher
16	Nearest Water Body	:	Kharkai River Approx. 3.35 km towards SW direction of mine site
17	Nearest Habitation	:	Bandua, Approx. 980 meters towards SE direction.
18	Nearest Railway Station	:	Pandrasali Railway station, approx. 12.16 km towards West direction.
19	Nearest Air Port	:	Birsamunda Airport, Ranchi approx. 98.49 km towards NW direction
20	Nearest Forest	:	Protected Forest Approx. 0.73 km towards South direction of mine site. Protected Forest Approx. 1.94 km towards South direction of mine site
21	Road & Highways	:	NH-220, Approx. 3.13 km in SE direction. NH-43 Approx. 6.57 km in NW direction

CO-ORDINATES

1	Latitude	From 22°37'15.59460"N	To 22°37'22.83841"N
2	Longitude	From 85°55'29.14590"E	To 85°55'38.23532"E

LAND DETAILS

Khata no.	Plot no.
80	20, 21, 25 & 26

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Saraikella-Kharsawan vide letter no. 84/M, dated 10.02.2024.
2	CO	:	The CO, Rajnagar vide letter no. 961, dated 22.07.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyani.
3	DMO	:	DMO, Saraikella-Kharsawan vide memo no. 696/M, dated 11.07.2024 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	Deputy Conservator of Forest & Field Director Elephant Project, Jamshedpur vide memo no. 1212, dated 24.07.2024 certified that

			the proposed project site is outside Eco Sensitive Zone of Dalma Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Saraikela Forest Division vide letter no. 466, dated 13.03.2023 certified that the distance of reserved / protected forest land is more than 250 meter from proposed project site.
6	DSR	:	The DC, Saraikella-Kharsawan vide letter no. 691/M, dated 09.07.2024 has informed that this project is part of District Survey Report (DSR) of Saraikella-Kharsawan District and accordingly necessary action with regard to Environmental Clearance can be taken.
7	Gram Sabha	:	BDO, Rajnagar vide letter no. 1035, dated 28.07.2023 informed that Gram Sabha conducted on 28.07.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Saraikella-Kharsawan vide Letter No. 669/Mining, dated 04.07.2024.
9	Qualified Person	:	Shri Sahadev Singh was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast other than fully Mechanized method
2	Quarry Area	:	1.48 Ha /3.66 Acre Life of Mine – 4.11 Years
3	Waste Generation	:	14399.50 cum waste shall be generated during the plan period
4	Stripping Ratio	:	1:0.09
5	Working Days	:	300
6	Bench: size & No	:	6m to 6m
7	Elevation of Mine	:	206 AMSL to 214 AMSL
8	Ground Level Elevation	:	206 AMSL
9	Ultimate Working Depth	:	183 AMSL
10	Water Table	:	180 AMSL
11	Topography of Mine	:	Area represents small hillock topography.
12	Explosive Requirement	:	90kg/day
13	Diesel/Fuel requirement	:	90 litre/day

Production Details

Year	Production of Stone		O.B. in cum	Intercalated waste in (Cum)	Total Waste in Cum	Bench (AMSL)
	in cum	in tones				








1st	22255.80	60090.66	5130.00	454.20	5584.20	208- 208
2nd	22417.50	60527.25	3685.00	457.50	4142.50	202 -202
3rd	22638.00	61122.60	00.00	462.00	462.00	196-190
4th	22314.60	60249.42	770.00	455.40	1225.40	202-184
5th	22314.39	60248.86	2530.00	455.40	2985.40	202-190
Total	111940.29	302238.79	12115.00	2284.5	14399.5	

Land Use

Type of Land	Existing (Ha)	Plan period(Ha)	Conceptual stage (Ha)
Excavation	0.0	0.789	0.789 ha (0.08 ha shall be backfilled, 0.709 ha converted in to water reservoir)
Waste Dump	0.0	0.125 (comes under mining)	0.125 (comes under mining)
Road	0.00	Comes under mining	(comes under mining)
Safety zone	0.00	0.691 (Plantation)	0.691 (Plantation)
Total Area in use	0.00	1.48	1.48
Total Lease Area	1.48	1.48	1.48

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Safety Zone	0.691/1728	1728
2	Along Approach Road	240m	480
3	No. of Plants distributed in Anganwadi, Panchayat Bhawan or in schools	--	100

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

Solid Waste Management

Total 14399.50 cum waste shall be generated during the plan period. 1st three years of the 50% waste shall be utilized for maintenance of the village road and making of approach, haul road etc. & 50% waste shall be temporary dumped in the south east side of the applied lease area and 4th & 5th year of total waste shall be backfilling in the exhausted quarry of the applied lease area and plantation along the safety zone is proposed to be carried out.

Environment Management Plan

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	14,000 8,000 8,000 7,000
3	Plantation	11,54,000	1,00,000
4	Construction and maintenance of haul road	1,00,000	90,000
TOTAL		12,54,500	4,27,000

Note: *2308 plants * 500 Rs (for each plants including hedges and fences)= Rs. 11.54 lakhs

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

300* 300 = 90000/-

Environment Monitoring Programme

S. No.	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.
- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
C4	Minor	Minor damage but does not cause injury to personnel
C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

Risk Rank (Likelihood x Consequence)	L5 (Very Unlikely)	L4 (Remote)	L3 (Occasional)	L2 (Probable)	L1 (Frequent)
C1 (Catastrophic)	5	4	3	2	1
C2 (Major)	10	8	6	4	2
C3 (Moderate)	15	12	9	6	3
C4 (Minor)	20	16	12	8	4
C5 (Insignificant)	25	20	15	10	5

Risk Rating Scale

S. No.	Rating	Scale
1	High Risk	1-4
2	Medium Risk	5-12
3	Low Risk	13-25

Hazard identification & Risk Analysis in Stone Mining operation

S. No.	Activity	Hazard	Probability	Severity	Score
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5

2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

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

Preventive Measures:

Face Stability

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

- Overall slope angles of benches will be maintained at 45°
- Unmanageable heights are not created
- Loose sides are properly dressed
- No tree, loose stone or debris will be permitted to remain within 3 meters of the edge or side of any excavation (Regulation 106(4) of MMR 1961)
- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

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

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

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the

face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

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

Dust generation during drilling

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

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

Noise Generation during drilling

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

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

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

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

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

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

Handling of Explosives

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

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

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

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

Health Hazards

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

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

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

Accident at Site

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

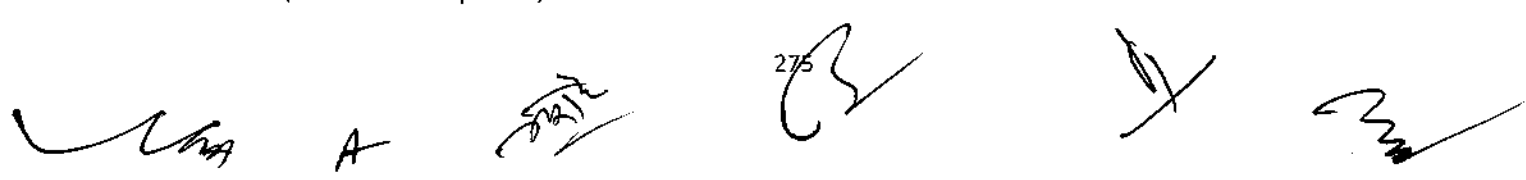
- Rough access roads
- Time pressure
- Inadequate brakes (Possibly from lack of maintenance)
- Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- Untrained drivers
- Overturning vehicles

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

Transportation

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

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

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

Undertaking submitted affirming:

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

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Ulidihi Stone Deposit of M/s Sai Resources Pvt. Ltd., Village : Ulidihi, Circle : Rajnagar, Distt.: Saraikela-Kharsawan, Jharkhand (1.48 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II alongwith the following specific conditions :

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

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

5. Bara Bhumri Stone Deposit of M/s Shiva Minerals (Prop. : Shri Ujjwal Kumar Singh), Village : Bara Bhumri, Circle : Potka, Distt.: East Singhbhum, Jharkhand (0.424 Ha).

(Proposal no.: SIA/JH/MIN/481928/2024)

Name of the consultant : P & M Solution, Noida, U.P.

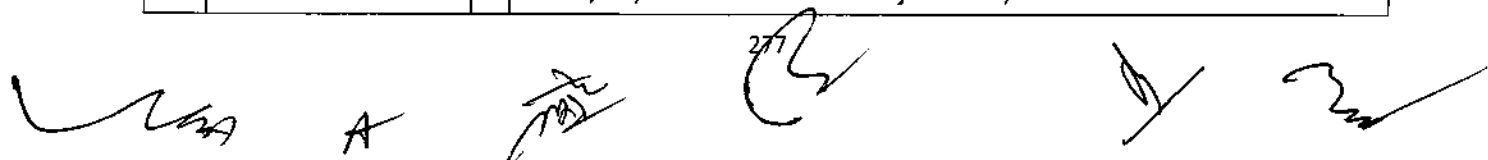
This is a new project which has been taken for appraisal on 25.07.2024.

Project Category : B2 – 1(a) Mining of Minerals : Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity- 12000 cum/annum or 30000 TPA

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Bara Bhumri Stone Deposit (Area- 0.424 ha. or 1.05 Acre)
2	Lessee:	: M/s Shiva Minerals (Prop- Sri Ujjwal Kumar Singh) At- D/19, Danish Arcade Masjid Road,



			Dhatkidih, Near Blood Bank, Jamshedpur- 831001
3	Lease Address	:	Village – Bara Bhumri, Circle - Potka, District – East Singhbhum, State- Jharkhand
4	Lease Area	:	0.424 ha. Acres- 1.05 Acre
5	Type of Land	:	Non-Forest (Raiyati Land)
6	Project Cost	:	Rs. 30 Lakhs
7	EMP Budget	:	Capital: 10.575 Lakhs Recurring: 4.27 Lakhs / year
8	New or Expansion	:	New
9	Mineable Reserves	:	60237.60 Cum 150594 tons
10	Mine Life	:	5 years
11	Man power	:	17
12	Water Requirement	:	8.425 KLD (Drinking: 0.17 KLD, Dust Suppression: 4.645 KLD, Plantation: 3.61 KLD)
13	Water Source	:	From Nearby villages by tankers
14	DG Set / power	:	200 KVA
15	Crusher	:	No Crusher
16	Nearest Water Body	:	Gudra Nadi, Approx. 2.33 km towards South direction of mine site.
17	Nearest Habitation	:	Bara Bhumri village, Approx. 800 meters towards West direction.
18	Nearest Railway Station	:	Haldipokhar Railway station, approx. 7.17 km towards WSW direction.
19	Nearest Air Port	:	Birsa Munda Airport, approx. 118 km towards NW direction.
20	Nearest Forest	:	Kudada PF, Approx. 8.25 km towards NNW direction of mine site. Open Jungle, Approx. 8.85 km towards SE direction of mine site. Open Jungle, Approx. 9.19 km towards ENE direction of mine site.
21	Road & Highways	:	Hata- Musabani Road- Approx. 1.14 km. in South direction. SH-6, Approx. 4.20 km. in West direction. NH-220, Approx. 4.91 km. in WSW direction.

CO-ORDINATES

1	Latitude	From 22°37'52.989" N	To 22°37'55.621" N
2	Longitude	From 86°12'17.598" E	To 86°12'19.916" E

LAND DETAILS

Khata no.	Plot no.
97	1123

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, East Singhbhum, Jamshedpur vide letter no. 1376/Khanan, dated 26.12.2023.
2	CO	:	The CO, Potka, East Singhbhum vide letter no. 616, dated 26.06.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, East Singhbhum, Jamshedpur vide memo no. 552/Khanan, dated 25.06.2024 certified that 01 other mining lease area (9.25 Acre) exists within 500 m radius from proposed project site and total area is 10.3 Acre.
4	DFO Wild Life	:	DFO, Dalma Elephant Project vide letter no. 954, dated 28.06.2023 certified that the proposed project site is outside Eco Sensitive Zone of Dalma Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Jamshedpur Forest Division vide letter no. 557, dated 09.03.2022 certified that the distance of reserved / protected forest land is more than 250 meter from proposed project site.
6	DSR	:	The District Magistrate -cum-DC, East Singhbhum, Jamshedpur vide letter no. 596/Khanan, dated 03.07.2024 has informed that this project is part of District Survey Report (DSR) of East Singhbhum district and accordingly necessary action with regard to Environmental Clearance can be taken.
7	Gram Sabha	:	BDO, Potka vide letter no. 990, dated 03.07.2023 informed that Gram Sabha conducted on 25.06.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, East Singhbhum, Jamshedpur vide Memo No. 484/Khanan, dated 06.06.2024.
9	Qualified Person	:	Dr. Gurupinder Singh Jaiswal was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Open caste other than fully mechanized method (OTFM)	
2	Quarry Area	:	0.424 ha. or 1.05 Acre	Life of Mine – 5 Years
3	Waste Generation	:	7170.97 cum	
4	Stripping Ratio	:	1: 0.119	
5	Working Days	:	300	

6	Benches: size & No	:	6m to 6m
7	Elevation of Mine	:	150 mRL to 152 mRL
8	Ground Level Elevation	:	150mRL
9	Ultimate Working Depth	:	130mRL
10	Water Table	:	125mRL
11	Topography of Mine	:	Area represents small hillock topography.
12	Explosive Requirement	:	70kg/day
13	Diesel/Fuel requirement	:	70 litre/day

Production Details

Year	Total excavation	Production of Stone		Intercalated waste 5% in (Cum)	O.B in cum	Total waste in cum	Bench RL in Meters
		in cum	in tons				
1st	12631.58	12000.00	30000.00	631.57	3533.34	4164.91	152 - 148
2nd	12630.10	11998.595	29996.48	631.50	480.00	1111.50	152 - 142
3rd	12629.90	11998.405	29996.01	631.49	-	631.49	148 - 142
4th	12630.52	11998.99	29997.49	631.52	-	631.52	142 - 136
5th	12631.17	11999.61	29999.02	631.55	-	631.55	142 - 130
Total	63153.27	59995.60	149989.00	3157.63	4013.34	7170.97	

Land Use

Type of Land	Existing Land use (Ha)	At the end of Plan period (Ha)	At Conceptual Period (Ha)
Excavation	Nil	0.239	0.239 (area shall be left as water reservoir for rain water harvesting)
Waste Dump	Nil	-	-
Road	Nil	-	-
Infrastructure	Nil	Nil	Nil
Safety zone	Nil	0.185 (Plantation)	0.185 (Plantation)
Total Applied Area	Nil	0.424	0.424

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Safety Zone	0.185/465	465
2	Along Approach Road	620m	1240
3	No. of plants distributed with consultation local authorities /village Panchayat	--	100

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

Solid Waste Management

Total 7170.97 cum waste shall be generated during the plan period. The waste to be generated in the 1st year shall be temporary stack on the western side of the applied lease area whereas from 2nd year onwards, entire waste including first year waste shall be utilized for making and maintaining the approach road, haul road and village road.

Environment Management Plan

Sl. No	Description	Capital Cost (Rs.)	Recurring Cost (Rs.)
1	Pollution Control & Dust Suppression	--	2,00,000
2	Baseline Monitoring i) Air ii) Water iii) Soil iv) Noise	--	14,000 8,000 8,000 7,000
3	Plantation	9,02,500	1,00,000
4	Construction and maintenance of haul road	1,55,000	90,000
TOTAL		10,57,500	4,27,000

Note: *1805 plants * 500 Rs (for each plants including hedges and fences) = 9.025 lakh

Salary of Labor for haul road maintenance 1 labor*300 =300 per day

300* 300 = 90000/-

*** 2.5 lakh per kilometer (250000 * 0.62 km haul road = 1,55,000/-)**

Environment Monitoring Programme

S. No.	Description	No. Monitoring Stations	Duration
1	Air	4 Stations	6 Monthly
2	Soil	2 Stations	6 Monthly
3	Surface Water	2 Stations	6 Monthly
4	Ground Water	2 Stations	6 Monthly
5	Noise	4 Stations	6 Monthly

Water Quality Management

- Mining is planned to above the ground water table. In case any intersection is likely, mining activities will be stopped 2m above the Ground Water Table.
- The rain water during rainy season will be collected in a pit and shall be use for dust suppression and plantation. Excess water, if any shall be discharged in natural stream after settling of suspended particles in the pit. Pump having required capacity will be installed to lift accumulated rain water from working pit and pumped to the settling tank.
- Garland drain shall be made around the Waste dump and the rain water shall be collected in garland drain and allowed to settle in a small pit for settling suspended particles before allowing discharge to natural drainage system. Check Pits and Retainer walls shall be constructed to prevent water flowing into the lease area from outside or from inside the lease area to the outside
- For domestic waste water Septic Tank with Soak Pit shall be provided, discharge from Soak Pit, if any shall be used for plantation.
- It shall be ensured that quality of drinking water for the worker is hygienic and good sanitation system shall be made available.

Air Quality Management

- Dust extractor or wet drilling shall be followed to control dust at source of emission during drilling.
- Sharp drill bits will be used for drilling and regrinding will be done periodically to reduce the dust generation.
- Controlled blasting to reduce dust emission and reduction in NOx emission
- All machineries and transport vehicles shall be properly maintained and pollution check will be done once in a year to keep the emissions from machineries and vehicle under control. Records for same to be maintained.

- Water sprinkling will be done on haul road to control emission of dust while transporting minerals and waste. Provision for water spray by tankers on 'kaccha road shall be done.
- Water sprinkling at loading area shall be done
- Use of personal protective equipment like dust mask e.t.c shall be put in practice
- Ambient air pollution monitoring shall be carried out every six months.

RISK ASSESSMENT

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

Probability/Likelihood of Occurrence of Hazard

Likelihood Level	Probability	Description
L5	Very Unlikely	Has not occurred/reported within last 5 years.
L4	Remote / Moderate	May occur if conditions exist. Has occurred within last 3 years.
L3	Occasional	Likely to occur if conditions exist. Has occurred within last 2 years.
L2	Probable	Very likely to occur. Has occurred within last year.
L1	Frequent	Almost certain to occur. Has occurred more than one within last year.

Severity/Impact Intensity

Severity Level	Severity	Description
C1	Catastrophic	May commonly cause death or major system loss, thereby requiring immediate cessation of the unsafe activity or operation.
C2	Major	May commonly cause severe injury or illness or major system damage thereby requiring immediate corrective action.
C3	Moderate	Minor injury to personnel or environment
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C5	Insignificant	May result in no, or less minor, illness, injury or system damage

Risk Assessment Chart (Qualitative Method)

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

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

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

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While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

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

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- Deep wetting of drilling zones will be done by water sprinkling before starting drilling.

Noise Generation during drilling

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

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

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

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

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

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

Handling of Explosives

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

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

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

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

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

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

Undertaking submitted affirming:

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

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

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Bara Bhumri Stone Deposit of M/s Shiva Minerals (Prop. : Shri Ujjwal Kumar Singh), Village : Bara Bhumri, Circle : Potka, Distt.: East Singhbhum, Jharkhand (0.424 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II alongwith the following specific conditions :

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

6. Tirla – I Sand Ghat of Jharkhand State Mineral Development Corporation Ltd. (JSMD),
Mauza : Tirla - I, Block : Manoharpur, Distt.: West Singhbhum, Jharkhand (18.90 Ha).

(Proposal no.: SIA/JH/MIN/488046/2024)

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

This is a new project which has been taken for appraisal on 25.07.2024.

Project Category : B1 – 1(a) Mining of Minerals : Application for Terms of Reference (ToR)
as per EIA notification, 2006.

ToR Application for: Proposed Capacity- 57,840 cum/annum or 1,51,541 TPA (Dry Basis)

Project and Location Details:

S.No.	Parameter	Details	
1	Project Name	Tirla-I Sand Ghat	
2	Lessee:	M/s Jharkhand State Mineral Development Corporation Ltd. (A Govt. of Jharkhand Enterprises)	
3	Lessee Address	Khanij Nigam Bhawan, Doranda, Ranchi – 834002 (Jharkhand)	
4	Lease Area	Ha. 18.90 Ha	Acres – 46.68 Acres
5	Type of Land	Non-Forest Government Land (River Bed)	
6	Project Cost	Rs 66.0 Lakhs	
7	EMP Budget	Capital: Rs 35.35 Lakhs	Recurring: 6,32 lakhs / year
8	New or Expansion	New	
9	Mineable Reserves for 1st year & subsequent year 60% of Replenished quantity	CUM: 57,840 cum (Dry Basis)	
10	Mine Life	Life of Mine/Lease Period, as per provision of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.	
11	Man power	152	
12	Water Requirement	Total water requirement is about 20.84 KLD= 6.84KLD (Drinking Water & Domestic Uses, 152 persons @45 LPCD) + 6.0 KLD (Water sprinkling) + 8.0 KLD (plantation)	
13	Water Source	By Authorised hired tankers	
14	DG Set / power	NA	
15	Crusher	NA	
16	Nearest Water Body	Koel River (Project Site)	
17	Nearest Habitation	Tirla, at 0.95 KM in NW direction.	
18	Nearest Rail Station	Ghaghra Railway Station is about 2.8 Km in NNW direction. Manoharpur Railway Station is about 1.23 Km in SSW direction.	

19	Nearest Air Port	Ranchi Airport is about 108 Km in North in direction.		
20	Nearest Forest	Name of Places	Distance (Km)	Direction
		Rungikocha P.F.	13.5	NNW
		Morang P.F.	14.5	NNW
		Chaurarapa P.F.	9.5	WNW
		Ankua R.F.	12.42	S
		Ambia R.F.	11.4	ENE
21	Road Highways	NH-320G is about 1.2 km in WNW direction		
22	Seismic zone	Zone II as per seismic zone map of India		

CO-ORDINATES

Pillar No.	Latitude	Longitude	Pillar No.	Latitude	Longitude
1	22°23'18.56"N	85°12'28.66"E	12	22°22'45.57"N	85°11'44.88"E
2	22°23'16.58"N	85°12'26.50"E	13	22°22'46.02"N	85°11'47.46"E
3	22°23'14.69"N	85°12'23.83"E	14	22°22'47.01"N	85°11'52.72"E
4	22°23'13.85"N	85°12'20.94"E	15	22°22'49.05"N	85°11'59.64"E
5	22°23'8.79"N	85°12'13.97"E	16	22°22'51.35"N	85°12'3.96"E
6	22°23'4.74"N	85°12'9.36"E	17	22°22'55.06"N	85°12'7.44"E
7	22°23'1.25"N	85°12'6.16"E	18	22°23'0.37"N	85°12'10.97"E
8	22°22'56.40"N	85°12'0.65"E	19	22°23'4.81"N	85°12'14.65"E
9	22°22'51.53"N	85°11'54.06"E	20	22°23'10.12"N	85°12'21.54"E
10	22°22'49.90"N	85°11'48.27"E	21	22°23'13.28"N	85°12'27.28"E
11	22°22'48.31"N	85°11'44.29"E	22	22°23'16.03"N	85°12'31.36"E

LAND DETAILS

Khata no.	Plot no.
03	1339 (P) & 1340 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Auction letter has been issued by Joint Secretary, Mines & Geology Deptt., Govt. of Jharkhand vide letter no. Kha.ni.-(Vividh)-117/2017-2090/M, dated 30.09.2022. According to provisions in Jharkhand State sand Mining Policy and its amendment. JSMDCLtd. has been nominated as nodal agency for operating sand mines in category II.
2	CO	:	The CO, Manoharpur vide letter no. 37, dated 25.01.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyani & Register II.

3	DMO	:	DMO, West Singhbhum, Chaibasa vide memo no. 461/M, dated 28.05.2024 certified that no other balughat exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	Deputy Conservator of Forest & Field Director Elephant Project, Jamshedpur vide memo no. 1149, dated 13.07.2024 certified that the proposed project site is outside Eco Sensitive Zone of Dalma Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Porahat Forest Division, Chaibasa vide letter no. 57, dated 12.01.2023 certified that the distance of forest is 1800 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of West Singhbhum District (Sl. no. KR3, Page no. 62).
7	Gram Sabha	:	BDO, Manoharpur vide letter no. 723, dated 10.06.2024 informed that Gram Sabha conducted on 08.06.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Chaibasa, West Singhbhum vide Memo No. 458/M, dated 27.05.2024.
9	Qualified Person	:	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

WORKING DETAILS

1	Mining Method	:	Opencast Manual Method
2	Quarry Area	:	18.90 Ha
3	Waste Generation	:	No waste generation
4	Stripping Ratio	:	0:0
5	Working Days	:	200 days
6	Bench: size & No	:	NA
7	Elevation of Mine	:	217 m AMSL to 216m AMSL
8	Ground Level Elevation	:	216 m AMSL
9	Ultimate Working Depth	:	1.0 m
10	Water Table	:	NA
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	None. No blasting required
13	Diesel/Fuel Requirement	:	Not required for mining.

PRODUCTION DETAILS

Year	Total Area(Ha)	Thickness(m)	Average Replenishment Rate As per	Volume(cum) 60%	Tonnage factor As per	Quantity in ton

			Approved DSR		Approved DSR	60%
1st	9.64	1.0	100%	57,840	2.62	1,51,541

LAND USE

GM Land	Area in Hectares
Private Land	0.00
Excavated Area	9.64
Safety Zone	9.26
Total Area	18.90

ENVIRONMENT MANAGEMENT

GREEN BELT DEVELOPMENT

Village	No of plants	Area consider for plantation (length of approach road	Species of plant
Tirla – I Sand Ghat Total area of 18.90 ha in River - Koel	4000	3.0 KM Approach road, 3000/3=1000 Plants (Two Row Plantation) along. The both side of the road.	Anjan, Sahjan, Mango, Jackfruit, Jamun, Sal, Gulmohar, Neem, Pipal, Arjun etc other local Fruits Bearing Tress

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

Environment Management Budget

Sr. No.	Particulars		Budget Provisions (Rs)	
			Capital	Recurring
1	Water Requirement	Water sprinkling for outgoing and incoming transportation vehicles (On-hired) for haul road and Green Belt. Cost for 200 days for 14 KLD @5 KL tanker capacity, Rupees 500- per tanker	30,000	2,80,000
2	Road maintenance &	Prepare & Maintenance of approach road (Max. Road length 3 Km, Width 4.0m)	15,00,000	1,50,000

	Monitoring	@500Rs per Meter.		
		Monitoring twice a year (Air, Soil, Water & Noise twice a year)	-	1,00,000
3	Plantation Scheme	Green Belt Development along the road (for each plants including hedges and fences) 4000 Plants @ INR 500/Plant	20,00,000	1,00,000
5	Solid Waste Management	Bins 10 nos.	5,000	1,000
		Transport of Dry Waste/Wet Waste	-	1,000
Total EMP Budget			35,35,000	6,32,000

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

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

SOLID WASTE MANAGEMENT

No solid waste is generated during the course of mining.

WATER QUALITY MANAGEMENT

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Sewage from rest shelter would be treated in Septic Tank soak pit.
- There is no other source for generation or discharge of trade effluent.

AIR QUALITY MANAGEMENT

Sand will be mined manually. No mining equipment would be needed. However, diesel operated tippers/tractors would be used for transportation of sand from mine to stockyard.

OPERATION OF DIESEL EQUIPMENT'S – They generate Noxious gases. It will be ensured that all transport vehicles would be repaired & maintained regularly.

LOADING OF PRODUCT ON TIPPERS – Water will be sprinkled on blasted Sand mass before they are loaded to trucks for transport.

MOVEMENT OF TIPPERS ON ROAD – Movement of tippers on road generate dust. For mitigation of this pollution following measures will be taken

- Regular water sprinkling on Haul road by using water tankers.
- Regular repair of Haul road
- All Trucks carrying Sand outside lease area will have PUC certificate.
- Transport tippers/traders moving on public road will be covered with tarpaulin.

RISK ASSOCIATED WITH PROJECT ACTIVITIES AND THEIR MITIGATION MEASURES ARE DISCUSSED BELOW:

ROAD ACCIDENTS

Transportation of sand along the public road may cause accident which may cause injury. Preventive Measures;

- Ensure speed limit for the haulage vehicle for 40 KMPH.
- Regular maintenance of haulage road
- Appropriate navigational signs informing sensitive area like school and habitation
- Regular maintenance of the vehicles.

DUST GENERATION

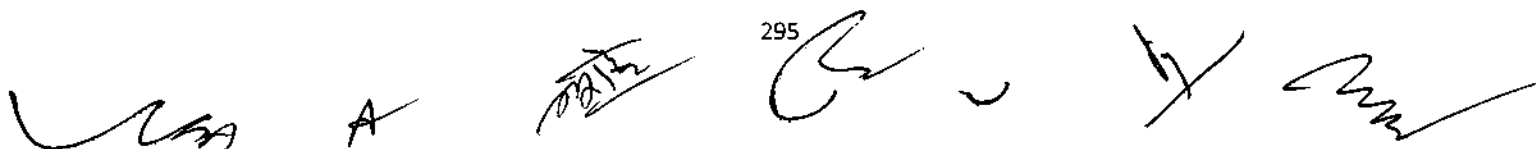
- No drilling involved
- Dust mass would be supplied to workers
- Regular sprinkling of water on road

NOISE GENERATION

Source of noise pollution in the project would be movement of tippers / tractors transporting sand from mine to stock yard. In general tippers / tractors produce a noise level of 75 – 90 (A) measured at distance of 3m from the source.

PREVENTIVE MEASURES

- Transportation activities would be confined during day time only.
- There would be a speed limit of 40 kmph for tippers. Higher is speed higher is noise.
- Regular repair and maintenance of tippers/tractors.
- Plantation on both sides of haulage road.
- Tippers having PUC certified will be allowed to be used for sand transportation.

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HEALTH HAZARDS

During digging and handling of sand i.e. loading, transportation and unloading of sand, workmen would be exposed to inhalation of fine dust particles. This poses a health hazard.

PREVENTIVE MEASURES

Following mitigation measures would be taken to minimize this impact on health

- Regular water sprinkling on haulage roads.
- Tree plantation on both sides of haulage road.
- Tippers / Tractors carrying sand would be covered.
- Mask would be provided to workmen employed for digging, loading, transportation and unloading activities

ACCIDENT AT SITE

This is a project with only source of accident at site would be movement of tippers / tractors within mine site for transportation of sand.

PREVENTIVE MEASURES

Following mitigation measures would be taken to minimise risk of road accident-

- Separate alignment for movement of loaded vehicles coming out of mine site
- Ensure speed restriction of 10 KMPH within mine site for incoming and outgoing tippers
- Regular maintenance and repair of haulage vehicles employed for sand transportation
- No overtaking of transportation vehicles within mine site
- Proper maintenance of haulage roads

TRANSPORTATION

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

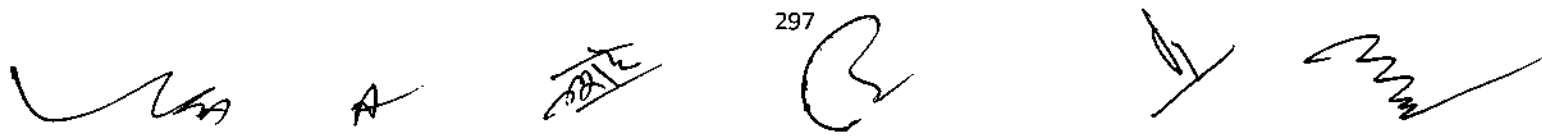
- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.
-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

- once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
 - To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
 - Only trained drivers will be hired.

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- k. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
- l. Transportation from the river bed to the NH-320G will be done using the existing road.
- m. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.
- n. Wet sand will not be transported.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 23, 24, 25, 26 & 27.07.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for

The bottom of the page features several handwritten signatures and initials in black ink. From left to right, there is a long, flowing signature, a single capital letter 'A', a signature that appears to be 'SATE', a large stylized letter 'B' or 'C', a signature that looks like 'J', and a final signature that resembles 'M'.

issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith the following specific condition :-

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- II. Pre-monsoon data of current year is to be included in final EIA report.
- III. Satellite imagery with Geo-Cordinates of pre-monsoon (current year) to be included in the final EIA report.

7. Tirla – II and Tartara Sand Ghat of Jharkhand State Mineral Development Corporation Ltd. (JSMDC), Mauza : Tirla – II and Tartara, Block : Manoharpur, Distt.: West Singhbhum, Jharkhand (10.70 Ha).

(Proposal no.: SIA/JH/MIN/488168/2024)

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

This is a new project which has been taken for appraisal on 25.07.2024.

Project Category : B1 – 1(a) Mining of Minerals : Application for Terms of Reference (ToR) as per EIA notification, 2006.

ToR Application for: Proposed Capacity- 39,733 cum/annum or 1,03,703 TPA (Dry Basis)

Project and Location Details:

S.No.	Parameter	Details	
1	Project Name	Tirla – II and Tartara Sand Ghat	
2	Lessee:	M/s Jharkhand State Mineral Development Corporation Ltd. (A Govt. of Jharkhand Enterprises)	
3	Lessee Address	Khanij Nigam Bhawan, Doranda, Ranchi – 834002 (Jharkhand)	
4	Lease Area	Ha. 10.70 Ha	Acres – 26.43 Acres
5	Type of Land	Non-Forest Government Land (River Bed)	
6	Project Cost	Rs 45.62 Lakhs	
7	EMP Budget	Capital: Rs 35.35 Lakhs	Recurring: 7.11 lakhs / year
8	New Expansion or	New	
9	Mineable	CUM: 39,733 cum (Dry Basis)	

	Reserves for 1st year & subsequent year 60% of Replenished quantity																			
10	Mine Life	Life of Mine/Lease Period, as per provision of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy																		
11	Man power	105																		
12	Water Requirement	Total water requirement is about 8.52 KLD= 4.72 KLD (Drinking Water & Domestic Uses, 105 persons @45 LPCD) + 2.0 KLD (Water sprinkling) + 1.8 KLD (plantation).																		
13	Water Source	By Authorised hired tankers																		
14	DG Set / power	NA																		
15	Crusher	NA																		
16	Nearest Water Body	Koel River (Project Site).																		
17	Nearest Habitation	Tirla, at 1.35 KM in WSW direction.																		
18	Nearest Rail Station	Ghaghra Railway Station is about 1.43 Km in NE direction. Manoharpur Railway Station is about 2.5 Km in SSW direction																		
19	Nearest Air Port	Ranchi Airport is about 110 Km in North in direction																		
20	Nearest Forest	<table border="1"> <thead> <tr> <th>Name of Places</th><th>Distance (Km)</th><th>Direction</th></tr> </thead> <tbody> <tr> <td>Rungikocha P.F.</td><td>11.5</td><td>NNW</td></tr> <tr> <td>Morang P.F.</td><td>13.05</td><td>NW</td></tr> <tr> <td>Chaurarapa P.F.</td><td>10</td><td>W</td></tr> <tr> <td>Ankua R.F.</td><td>9.66</td><td>S</td></tr> <tr> <td>Ambia R.F.</td><td>11.4</td><td>ENE</td></tr> </tbody> </table>	Name of Places	Distance (Km)	Direction	Rungikocha P.F.	11.5	NNW	Morang P.F.	13.05	NW	Chaurarapa P.F.	10	W	Ankua R.F.	9.66	S	Ambia R.F.	11.4	ENE
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Ankua R.F.	9.66	S																		
Ambia R.F.	11.4	ENE																		
21	Road Highways	NH-320G is about 2.75 km in W direction NH-320D is about 2.34 km in E direction																		
22	Seismic zone	Zone II as per seismic zone map of India																		

CO-ORDINATES

Pillar No.	Latitude	Longitude	Pillar No.	Latitude	Longitude
1	22°24'7.47"N	85°12'22.86"E	9	22°23'35.76"N	85°12'38.62"E
2	22°24'8.81"N	85°12'26.21"E	10	22°23'35.77"N	85°12'35.37"E
3	22°24'7.00"N	85°12'27.25"E	11	22°23'42.32"N	85°12'34.64"E
4	22°24'4.02"N	85°12'29.26"E	12	22°23'48.18"N	85°12'33.00"E
5	22°23'59.65"N	85°12'32.17"E	13	22°23'53.43"N	85°12'31.01"E

6	22°23'51.80"N	85°12'35.55"E	14	22°23'57.15"N	85°12'29.15"E
7	22°23'42.43"N	85°12'38.26"E	15	22°24'3.78"N	85°12'25.44"E
8	22°23'38.25"N	85°12'38.29"E			

LAND DETAILS

Mauza	Khata no.	Plot no.
Tirla-II	03	1340 (P)
Tartara	02	1332 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	: The Auction letter has been issued by Joint Secretary, Mines & Geology Deptt., Govt. of Jharkhand vide letter no. Kha.ni.-(Vividh)-117/2017-2090/M, dated 30.09.2022. According to provisions in Jharkhand State sand Mining Policy and its amendment. JSMDCLtd. has been nominated as nodal agency for operating sand mines in category II.
2	CO	: The CO, Manoharpur vide letter no. 37, dated 25.01.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyani & Register II.
3	DMO	: DMO, West Singhbhum, Chaibasa vide memo no. 461/M, dated 28.05.2024 certified that no other balughat exists within 500 m radius from proposed project site.
4	DFO Wild Life	: Deputy Conservator of Forest & Field Director Elephant Project, Jamshedpur vide memo no. 1153, dated 13.07.2024 certified that the proposed project site is outside Eco Sensitive Zone of Dalma Wildlife Sanctuary.
5	DFO Territorial	: Division Forest Officer, Porahat Forest Division, Chaibasa vide letter no. 57, dated 12.01.2023 certified that the distance of forest is 4200 meter from proposed project site.
6	DSR	: This project is mentioned in approved DSR of West Singhbhum District (Sl. no. KR4, Page no. 63).
7	Gram Sabha	: BDO, Manoharpur vide letter no. 723, dated 10.06.2024 informed that Gram Sabha conducted on 08.06.2024.
8	Mine Plan	: Approved by District Mining Officer, Chaibasa, West Singhbhum

	Approval		vide Memo No. 457/M, dated 27.05.2024.
9	Qualified Person	:	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

WORKING DETAILS

1	Mining Method	:	Opencast Manual Method
2	Quarry Area	:	10.70 Ha
3	Waste Generation	:	No waste generation
4	Stripping Ratio	:	0:0
5	Working Days	:	200 per year
6	Benches: size & No	:	NA
7	Elevation of Mine	:	209 m AMSL to 208.22m AMSL
8	Ground Level Elevation	:	208.22m AMSL
9	Ultimate Working Depth	:	0.78m
10	Water Table	:	NA
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	None. No blasting required
13	Diesel/Fuel Requirement	:	Not required for mining.

PRODUCTION DETAILS

Year	Total Area (Ha)	Thickness (m)	Average Replenishment Rate As per Approved DSR	Volume (cum) 60%	Tonnage factor As per Approved DSR	Quantity in ton 60%
1st	8.49	0.78	100%	39,733	2.61	1,03,703

LAND USE

GM Land	Area in Hectares
Private Land	Nil
Excavated Area	8.49
Safety Zone	2.21
Total Area	10.70

ENVIRONMENT MANAGEMENT

GREEN BELT DEVELOPMENT

Village	No of plants	Area consider for plantation (length of approach road)	Species of plant
Tirla – II & Tartara Sand Ghat Total area of 10.70 ha in River - Koel	4000	3.0KM Approach Road, $3000/3=1000$ Plants $1000 \times 4=4000$ plants (Two Row Plantation along The both side of the road)	Anjan, Sahjan, Mango, Jackfruit, Jamun, Sal, Gulmohar, Neem, Pipal, Arjun etc other local Fruits Bearing Tress

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

Environment Management Budget

Sr. No.	Particulars		Budget Provisions (Rs)	
			Capital	Recurring
1	Water Requirement	Water sprinkling for outgoing and incoming transportation vehicles (On-hired) for haul road and Green Belt. Cost for 200 days for 14 KLD @5 KL tanker capacity, Rupees 500- per tanker	30,000	3,60,000
2	Road maintenance & Monitoring	Prepare & Maintenance of approach road (Max. Road length 3 Km, Width 4.0m) @500Rs per Meter.	15,00,000	1,50,000
		Monitoring twice a year (Air, Soil, Water & Noise twice a year)	-	1,00,000
3	Plantation Scheme	Green Belt Development along the road (for each plants including hedges and fences) 4000 Plants @ INR 500/Plant	20,00,000	1,00,000
5	Solid Waste Management	Bins 10 nos.	5,000	1,000
		Transport of Dry Waste/Wet Waste	-	
Total EMP Budget			35,35,000	7,11,000

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

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

Undertaking submitted affirming:

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

- j. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- k. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
- l. Transportation from the river bed to the NH-320G will be done using the existing road.
- m. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.
- n. Wet sand will not be transported.

SOLID WASTE MANAGEMENT

No solid waste is generated during the course of mining.

WATER QUALITY MANAGEMENT

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Sewage from rest shelter would be treated in Septic Tank soak pit.
- There is no other source for generation or discharge of trade effluent.

AIR QUALITY MANAGEMENT

Sand will be mined manually. No mining equipment would be needed. However, diesel operated tippers/tractors would be used for transportation of sand from mine to stockyard.

OPERATION OF DIESEL EQUIPMENT'S – They generate Noxious gases. It will be ensured that all transport vehicles would be repaired & maintained regularly.

LOADING OF PRODUCT ON TIPPERS – Water will be sprinkled on blasted Sand mass before they are loaded to trucks for transport.

MOVEMENT OF TIPPERS ON ROAD – Movement of tippers on road generate dust. For mitigation of this pollution following measures will be taken

- Regular water sprinkling on Haul road by using water tankers.
- Regular repair of Haul road
- All Trucks carrying Sand outside lease area will have PUC certificate.
- Transport tippers/traders moving on public road will be covered with tarpaulin.

RISK ASSOCIATED WITH PROJECT ACTIVITIES AND THEIR MITIGATION MEASURES ARE DISCUSSED BELOW:

ROAD ACCIDENTS

Transportation of sand along the public road may cause accident which may cause injury.

Preventive Measures;

- Ensure speed limit for the haulage vehicle for 40 KMPH.
- Regular maintenance of haulage road
- Appropriate navigational signs informing sensitive area like school and habitation
- Regular maintenance of the vehicles.

DUST GENERATION

- No drilling involved
- Dust mask would be supplied to workers
- Regular sprinkling of water on road

NOISE GENERATION

Source of noise pollution in the project would be movement of tippers / tractors transporting sand from mine to stock yard. In general tippers / tractors produce a noise level of 75 – 90 (A) measured at distance of 3m from the source.

PREVENTIVE MEASURES

- Transportation activities would be confined during day time only.
- There would be a speed limit of 40 kmph for tippers. Higher is speed higher is noise.
- Regular repair and maintenance of tippers/tractors.
- Plantation on both sides of haulage road.
- Tippers having PUC certified will be allowed to be used for sand transportation.

HEALTH HAZARDS

During digging and handling of sand i.e. loading, transportation and unloading of sand, workmen would be exposed to inhalation of fine dust particles. This poses a health hazard.

PREVENTIVE MEASURES

Following mitigation measures would be taken to minimize this impact on health

- Regular water sprinkling on haulage roads.

- Tree plantation on both sides of haulage road.
- Tippers / Tractors carrying sand would be covered.
- Mask would be provided to workmen employed for digging, loading, transportation and unloading activities

ACCIDENT AT SITE

This is a project with only source of accident at site would be movement of tippers / tractors within mine site for transportation of sand.

PREVENTIVE MEASURES

Following mitigation measures would be taken to minimise risk of road accident-

- Separate alignment for movement of loaded vehicles coming out of mine site
- Ensure speed restriction of 10 KMPH within mine site for incoming and outgoing tippers
- Regular maintenance and repair of haulage vehicles employed for sand transportation
- No overtaking of transportation vehicles within mine site
- Proper maintenance of haulage roads

TRANSPORTATION

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

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

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 23, 24, 25, 26 & 27.07.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith following specific condition :-

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- II. Pre-monsoon data of current year is to be included in final EIA report.
- III. Satellite imagery with Geo-Cordinates of pre-monsoon (current year) to be included in the final EIA report.

8. **Jojoda & Tamdel-II Sand Ghat of Jharkhand State Mineral Development Corporation Ltd. (JSMDCL), Mauza : Jojoda & Tamdel-II, Block : Gudri, Thana : Chakradharpur, Distt.: West Singhbhum, Jharkhand (13.90 Ha).**
(Proposal no.: SIA/JH/MIN/488370/2024)

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

This is a new project which has been taken for appraisal on 25.07.2024.

Project Category : B1 – 1(a) Mining of Minerals : Application for Terms of Reference (ToR) as per EIA notification, 2006.

ToR Application for: Proposed Capacity- 63,261 cum/annum or 1,65,111TPA (dry basis)

Project and Location Details:

S.No.	Parameter	Details
1	Project Name	Jojoda & Tamdel-II Sand Ghat
2	Lessee:	M/s Jharkhand State Mineral Development Corporation Ltd. (A Govt. of Jharkhand Enterprises)

3	Lessee Address	Khanij Nigam Bhawan, Doranda, Ranchi – 834002 (Jharkhand)																	
4	Lease Area	Ha. 13.90 Ha.	Acres – 34.33 Acres																
5	Type of Land	Non-Forest Government Land (River Bed)																	
6	Project Cost	Rs 69.23 Lakhs																	
7	EMP Budget	Capital: Rs 82.01 Lakhs	Recurring: 13.36 lakhs / year																
8	New or Expansion	New																	
9	Mineable Reserves for 1st year & subsequent year 60% of Replenished quantity	CUM: 63,261 cum (Dry Basis)																	
10	Mine Life	Life of Mine/Lease Period, as per provision of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.																	
11	Man power	166																	
12	Water Requirement	Total water requirement is about 39.8 KLD= 7.2 KLD (Drinking Water & Domestic Uses, 166 persons @45 LPCD) + 14 KLD (Water sprinkling) + 18.6 KLD (plantation)																	
13	Water Source	By Authorised hired tankers																	
14	DG Set / power	NA																	
15	Crusher	NA																	
16	Nearest Water Body	Koel River (Project Site)																	
17	Nearest Habitation	Tamdol, at 1.02 KM in ENE direction.																	
18	Nearest Rail Station	Goilkera Railway station is about 25.5 Km in ESE direction. Posita railway Station is about 19.32 km in South side of mine.																	
19	Nearest Air Port	Ranchi Airport is about 81.62 Km in North in direction.																	
20	Nearest Forest	<table><tr><th>Name of Places</th><th>Distance (Km)</th><th>Direction</th></tr><tr><td>GIRGA R.F.</td><td>2.65</td><td>NNE</td></tr><tr><td>PUMAPANI P.F.</td><td>6.5</td><td>NW</td></tr><tr><td>MORANG P.F.</td><td>9.6</td><td>S</td></tr><tr><td>SADAMCHAPAR P.F.</td><td>6.8</td><td>SE</td></tr></table>			Name of Places	Distance (Km)	Direction	GIRGA R.F.	2.65	NNE	PUMAPANI P.F.	6.5	NW	MORANG P.F.	9.6	S	SADAMCHAPAR P.F.	6.8	SE
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		CHATA PAHAR P.F.	9.9	WSW
		BERA R.F.	11.13	ENE
21	Road Highways	NH-320G is about 9.36 km in W direction NH-320D is about 11.11 km in SE direction		
22	Seismic zone	Zone II as per seismic zone map of India		

CO-ORDINATES

Pillar No.	Latitude	Longitude	Pillar No.	Latitude	Longitude
1	22° 35'45.60"N	85°9'34.51"E	15	22° 35'48.78"N	85°8'53.09"E
2	22° 35'45.59"N	85°9'32.12"E	16	22° 35'47.39"N	85°8'55.00"E
3	22° 35'45.46"N	85°9'28.78"E	17	22° 35'44.58"N	85°8'59.58"E
4	22° 35'45.41"N	85°9'27.69"E	18	22° 35'42.14"N	85°9'4.59"E
5	22° 35'45.55"N	85°9'26.09"E	19	22° 35'41.53"N	85°9'6.73"E
6	22° 35'46.06"N	85°9'22.09"E	20	22° 35'41.16"N	85°9'10.27"E
7	22° 35'46.03"N	85°9'20.01"E	21	22° 35'41.39"N	85°9'12.24"E
8	22° 35'45.66"N	85°9'17.74"E	22	22° 35'42.38"N	85°9'16.08"E
9	22° 35'45.95"N	85°9'14.92"E	23	22° 35'43.08"N	85°9'20.01"E
10	22° 35'46.14"N	85°9'10.66"E	24	22° 35'43.28"N	85°9'23.33"E
11	22° 35'46.57"N	85°9'6.56"E	25	22° 35'43.27"N	85°9'27.55"E
12	22° 35'50.04"N	85°8'58.67"E	26	22° 35'43.11"N	85°9'30.45"E
13	22° 35'52.51"N	85°8'54.73"E	27	22° 35'42.63"N	85°9'34.26"E
14	22° 35'49.05"N	85°8'52.18"E			

LAND DETAILS

Mauza	Khata no.	Plot no.
Jojoda	01	1019 (P) & 1089 (P)
Tamdel -II	02	1332 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Auction letter has been issued by Joint Secretary, Mines & Geology Deptt., Govt. of Jharkhand vide letter no. Kha.ni.-(Vividh)-117/2017-2090/M, dated 30.09.2022. According to provisions in Jharkhand State sand Mining Policy and its amendment. JSMDCLtd. has been nominated as nodal agency for operating sand mines in category II.
2	CO	:	The CO, Gudri vide letter no. 18, dated 21.02.2023 has mentioned the plot no. of the project is not recorded as "Jungle- Jhari" in R.S. Khatiyan & Register II.
3	DMO	:	DMO, West Singhbhum, Chaibasa vide memo no. 461/M, dated 28.05.2024 certified that no other balughat exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	Deputy Conservator of Forest & Field Director Elephant Project, Jamshedpur vide memo no. 1152, dated 13.07.2024 certified that the proposed project site is outside Eco Sensitive Zone of Dalma Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Porahat Forest Division, Chaibasa vide letter no. 57, dated 12.01.2023 certified that the distance of forest is 1100 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of West Singhbhum District (Sl. no. SKR9, Page no. 64).
7	Gram Sabha	:	BDO, Gudri vide letter no. 306, dated 11.06.2024 informed that Gram Sabha conducted on 11.06.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Chaibasa, West Singhbhum vide Memo No. 459/M, dated 27.05.2024.
9	Qualified Person	:	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

WORKING DETAILS

1	Mining Method	:	Opencast Manual Method
2	Quarry Area	:	13.90 Ha
3	Waste Generation	:	No waste generation
4	Stripping Ratio	:	0:0
5	Working Days	:	200 day

6	Benches: size & No	:	NA
7	Elevation of Mine	:	250 m AMSL to 249.01 m AMSL
8	Ground Level Elevation	:	212.01 m AMSL
9	Ultimate Working Depth	:	0.99 m
10	Water Table	:	NA
11	Topography of Mine	:	Area represents gently sloping land.
12	Explosive Requirement	:	None. No blasting required
13	Diesel/Fuel Requirement	:	Not required for mining.

PRODUCTION DETAILS

Year	Total Area(Ha)	Thickn ess (m)	Average Replenishment Rate As per Approved DSR	Volume (cum) 60%	Tonnage factor as per Approved DSR	Quantity in tonne
1st	10.65	0.99	100%	63,261	2.61	1,65,111

LAND USE

GM Land	Area in Hectares
Private Land	Nil
Proposed Mining Area (Govt. Land)	10.65
Company land	3.25
Total Area	13.90

ENVIRONMENT MANAGEMENT

GREEN BELT DEVELOPMENT

Village	No of plants	Area consider for plantation (length of approach road	Species of plant
Jojoda & Tamdel-II Sand Ghat Total area of 13.90 ha in River - Koel	9332	7.0 Km Approach Road $7000/3=2333$ plants $2333*4= 9332$ plants (Two row plantations along with the both side of road)	Anjan, Sahjan, Mango, Jackfruit, Jamun, Sal, Gulmohar, Neem, Pipal, Arjun etc other local Fruits Bearing Tress

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

Environment Management Budget

Sr. No.	Particulars		Budget Provisions (Rs)	
			Capital	Recurring
1	Water Requirement	Water sprinkling for outgoing and incoming transportation vehicles for haul road and Green Belt. Cost for 200 days for 32.6 KLD @5 KL tanker capacity, Rupees 500- per tanker	30,000	652,000
2	Road Maintenance & Monitoring budget	Prepare & Maintenance of approach road (Max. Road length 7 Km, Width 4.0m) @200Rs. /Sq. Meter.	3,500,000	350,000
		Monitoring twice a year (Air, Soil, Water & Noise twice a year)	-	100,000
3	Plantation Scheme	Green Belt Development along the road (for eac plants including hedges and fences) 9332 Plants @ INR 500/Plant	1,666,000	233,300
4	Solid Waste Management	Bins 10 nos.	5,000	1,000
		Transport of Dry Waste/Wet Waste	-	
Total EMP Budget			8,201,000	1,336,300

Environment Monitoring Plan (post operation)**Monitoring Parameters and Frequency of Monitoring**

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx In the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly

3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
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- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- k. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
- l. Transportation from the river bed to the NH-320G will be done using the existing road.
- m. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.
- n. Wet sand will not be transported.

SOLID WASTE MANAGEMENT

No solid waste is generated during the course of mining.

WATER QUALITY MANAGEMENT

- Mining will be confined to above Ground Water Table (GWT). No mining will be done

below GWT.

- Sewage from rest shelter would be treated in Septic Tank soak pit.
- There is no other source for generation or discharge of trade effluent.

AIR QUALITY MANAGEMENT

Sand will be mined manually. No mining equipment would be needed. However, diesel operated tippers/tractors would be used for transportation of sand from mine to stockyard.

OPERATION OF DIESEL EQUIPMENT'S – They generate Noxious gases. It will be ensured that all transport vehicles would be repaired & maintained regularly.

LOADING OF PRODUCT ON TIPPERS – Water will be sprinkled on blasted Sand mass before they are loaded to trucks for transport.

MOVEMENT OF TIPPERS ON ROAD – Movement of tippers on road generate dust. For mitigation of this pollution following measures will be taken

- Regular water sprinkling on Haul road by using water tankers.
- Regular repair of Haul road
- All Trucks carrying Sand outside lease area will have PUC certificate.
- Transport tippers/traders moving on public road will be covered with tarpaulin.

RISK ASSOCIATED WITH PROJECT ACTIVITIES AND THEIR MITIGATION MEASURES ARE DISCUSSED BELOW:

ROAD ACCIDENTS

Transportation of sand along the public road may cause accident which may cause injury. Preventive Measures;

- Ensure speed limit for the haulage vehicle for 40 KMPH.
- Regular maintenance of haulage road
- Appropriate navigational signs informing sensitive area like school and habitation
- Regular maintenance of the vehicles.

DUST GENERATION

- No drilling involved
- Dust mass would be supplied to workers
- Regular sprinkling of water on road

NOISE GENERATION

Source of noise pollution in the project would be movement of tippers / tractors transporting sand from mine to stock yard. In general tippers / tractors produce a noise level of 75 – 90 (A) measured at distance of 3m from the source.

PREVENTIVE MEASURES

- Transportation activities would be confined during day time only.
- There would be a speed limit of 40 kmph for tippers. Higher is speed higher is noise.

- Regular repair and maintenance of tippers/tractors.
- Plantation on both sides of haulage road.
- Tippers having PUC certified will be allowed to be used for sand transportation.

HEALTH HAZARDS

During digging and handling of sand i.e. loading, transportation and unloading of sand, workmen would be exposed to inhalation of fine dust particles. This poses a health hazard.

PREVENTIVE MEASURES

Following mitigation measures would be taken to minimize this impact on health

- Regular water sprinkling on haulage roads.
- Tree plantation on both sides of haulage road.
- Tippers / Tractors carrying sand would be covered.
- Mask would be provided to workmen employed for digging, loading, transportation and unloading activities

ACCIDENT AT SITE

This is a project with only source of accident at site would be movement of tippers / tractors within mine site for transportation of sand.

PREVENTIVE MEASURES

Following mitigation measures would be taken to minimise risk of road accident-

- Separate alignment for movement of loaded vehicles coming out of mine site
- Ensure speed restriction of 10 KMPH within mine site for incoming and outgoing tippers
- Regular maintenance and repair of haulage vehicles employed for sand transportation
- No overtaking of transportation vehicles within mine site
- Proper maintenance of haulage roads

TRANSPORTATION

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

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.

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

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 23, 24, 25, 26 & 27.07.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith following specific condition :-

- In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- Pre-monsoon data of current year is to be included in final EIA report.
- Satellite imagery with Geo-Cordinates of pre-monsoon (current year) to be included in the final EIA report.

9. Abhaipur, Dhanapali & Domloi Sand Ghat of Jharkhand State Mineral Development Corporation Ltd. (JSMDC), Mauza : Abhaipur, Dhanapali & Domloi, Anchal : Manoharpur, Distt.: West Singhbhum, Jharkhand (43.00 Ha).

Proposal no.: SIA/JH/MIN/488371/2024)

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

This is a new project which has been taken for appraisal on 25.07.2024.

Project Category : B1 – 1(a) Mining of Minerals : Application for Terms of Reference (ToR) as per EIA notification, 2006.

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PROJECT AND LOCATION DETAILS

S.No.	Parameter	Details	
1	Project Name	Abhaipur, Dhanapali&Domloi Sand Ghat	
2	Lessee:	M/s Jharkhand State Mineral Development Corporation Ltd. (A Govt. of Jharkhand Enterprises)	
3	Lessee Address	Khanij Nigam Bhawan, Doranda, Ranchi – 834002 (Jharkhand)	
4	Lease Area	Ha. 43.0 Ha	Acres – 106.21 Acres
5	Type of Land	Non-Forest Government Land (River Bed)	
6	Project Cost	Rs 1.99 Crores	
7	EMP Budget	Capital: Rs 12.01 Lakhs	Recurring: 3.02 lakhs / year
8	New or Expansion	New	
9	Mineable Reserves for 1st year & subsequent year 60% of Replenished quantity	1,92,913 cum (Dry Basis)	
10	Mine Life	Life of Mine/Lease Period, as per provision of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy	
11	Man power	508	
12	Water Requirement	Total water requirement is about 28.7 KLD= 22.8 KLD (Drinking Water & Domestic Uses, 508 persons @45 LPCD) + 2.0 KLD (Water sprinkling) + 3.9 KLD (plantation).	
13	Water Source	By Authorised hired tankers	
14	DG Set / power	NA	
15	Crusher	NA	
16	Nearest Water Body	Koel River (Project Site).	
17	Nearest Habitation	Abhaipur, at 0.32 KM in N direction.	

18	Nearest Railway Station	Manoharpur Railway Station about 1.86 km in southern direction																		
19	Nearest Air Port	Ranchi Airport is about 118 Km in North in direction																		
20	Nearest Forest	<table border="1"> <thead> <tr> <th>Name of Places</th><th>Distance (Km)</th><th>Direction</th></tr> </thead> <tbody> <tr> <td>South Sukra R.F.</td><td>4.28</td><td>WNW</td></tr> <tr> <td>Baghdega R.F.</td><td>12.54</td><td>W</td></tr> <tr> <td>Chaurarapa P.F.</td><td>11.6</td><td>NNW</td></tr> <tr> <td>Ankua R.F.</td><td>9.8</td><td>SSE</td></tr> <tr> <td>Ambia R.F.</td><td>13.45</td><td>ENE</td></tr> </tbody> </table>	Name of Places	Distance (Km)	Direction	South Sukra R.F.	4.28	WNW	Baghdega R.F.	12.54	W	Chaurarapa P.F.	11.6	NNW	Ankua R.F.	9.8	SSE	Ambia R.F.	13.45	ENE
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Ankua R.F.	9.8	SSE																		
Ambia R.F.	13.45	ENE																		
21	Road Highways	MDR (Dhanapali Rd) which is about 0.45 Km in NW direction NH-320D is about 3.77 km in SE direction																		
22	Seismic zone	Zone II as per seismic zone map of India																		

CO-ORDINATES

Pillar No.	Latitude	Longitude	Pillar No.	Latitude	Longitude
1	22°20'0.96"N	85°7'59.15"E	11	22°19'28.85"N	85°7'14.09"E
2	22°19'55.68"N	85°7'59.28"E	12	22°19'33.96"N	85°7'5.42"E
3	22°19'55.10"N	85°7'53.55"E	13	22°19'39.25"N	85°7'8.82"E
4	22°19'54.43"N	85°7'48.17"E	14	22°19'43.00"N	85°7'12.31"E
5	22°19'53.52"N	85°7'42.68"E	15	22°19'48.03"N	85°7'17.36"E
6	22°19'52.36"N	85°7'37.23"E	16	22°19'51.94"N	85°7'21.28"E
7	22°19'46.29"N	85°7'30.08"E	17	22°19'56.89"N	85°7'30.23"E
8	22°19'43.06"N	85°7'25.66"E	18	22°20'0.18"N	85°7'39.00"E
9	22°19'39.03"N	85°7'21.01"E	19	22°20'1.18"N	85°7'46.17"E
10	22°19'35.42"N	85°7'17.91"E	20	22°20'1.65"N	85°7'53.45"E

LAND DETAILS

Mauza	Khata no.	Plot no.
Abhaipur, Dhanapali &	03	1493 (P), 1495 (P) & 1729 (P)
Domloi	01	01 (P) & 1351 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Auction letter has been issued by Joint Secretary, Mines & Geology Deptt., Govt. of Jharkhand vide letter no. Kha.ni.-(Vividh)-117/2017-2090/M, dated 30.09.2022. According to provisions in Jharkhand State sand Mining Policy and its amendment. JSMDCLtd. has been nominated as nodal agency for operating sand mines in category II.
2	CO	:	The CO, Manoharpur vide letter no. 37, dated 25.01.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyani & Register II.
3	DMO	:	DMO, West Singhbhum, Chaibasa vide memo no. 461/M, dated 28.05.2024 certified that no other balughat exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	Deputy Conservator of Forest & Field Director Elephant Project, Jamshedpur vide memo no. 1150, dated 13.07.2024 certified that the proposed project site is outside Eco Sensitive Zone of Dalma Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Porahat Forest Division, Chaibasa vide letter no. 57, dated 12.01.2023 certified that the distance of forest is 300 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of West Singhbhum District (Sl. no. KR1, Page no. 61).
7	Gram Sabha	:	BDO, Manoharpur vide letter no. 723, dated 10.06.2024 informed that Gram Sabha conducted on 08.06.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Chaibasa, West Singhbhum vide Memo No. 455/M, dated 27.05.2024.
9	Qualified Person	:	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

WORKING DETAILS

1	Mining Method	:	Opencast Manual Method
2	Quarry Area	:	43.0Ha; 106.21 Acre
3	Waste Generation	:	No waste generation
4	Stripping Ratio	:	0:0
5	Working Days	:	200 days
6	Bench: size & No	:	NA

7	Elevation of Mine	: 203 m AMSL to 202.18m AMSL
8	Ground Level Elevation	: 202.18m AMSL
9	Ultimate Working Depth	: 0.82m
10	Water Table	: NA
11	Topography of Mine	: Area represents gently sloping land.
12	Explosive Requirement	: None. No blasting required
13	Diesel/Fuel Requirement	: Not required for mining.

PRODUCTION DETAILS

Year	Total Area (Ha)	Thickness (m)	Average Replenishment Rate as per Approved DSR	Volume (cum) 60%	Tonnage factor as per Approved DSR	Quantity in ton as per Approved DSR
1st	39.21	0.82	100%	1,92,913	2.61	5,03,503

LAND USE

GM Land	Area in Hectares
Private Land	Nil
Excavated Area	39.21
Safety Zone	3.79
Total Area	43.0

ENVIRONMENT MANAGEMENT

GREEN BELT DEVELOPMENT

Village	No of plants	Area consider for plantation (length of approach road)	Species of plant
Abhaipur, Dhanapali & Domloi Sand Ghat Total area of 43.0 ha in River - Koel	1332	1 KM Approach Road, $1000/3 = 333$ Plants $333 \times 4 = 1332$ Plants (two row plantations along the both side of the road)	Anjan, Sahjan, , Mango, Jackfruit, Jamun, Sal, Gulmohar, Neem, Pipal, Arjun etc other local Fruits Bearing Trees

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

Environment Management Budget

Sr. No.	Particulars		Budget Provisions (Rs.)	
			Capital	Recurring
1	Water Requirement	Water sprinkling for outgoing and incoming transportation vehicles for haul road and Green Belt. Cost for 200 days for 5.9 KLD @5 KL tanker capacity, Rupees 500- per tanker	30,000	1,18,000
2	Road Maintenance & Monitoring	Prepare & Maintenance of approach road (Max. Road length 1 Km, Width 4.0m) @500Rs. /Sq. Meter.	5,00,000	50,000
		Monitoring twice a year (Air, Soil, Water & Noise twice a year)	-	1,00,000
3	Plantation Scheme	Green Belt Development along the road (for each plants including hedges and fences) 1332 Plants @ INR 500/Plant	6,66,000	33,300
4	Solid Waste Management	Bins 10 nos.	5,000	1,000
		Transport of Dry Waste/Wet Waste	-	
Total EMP Budget			12,01,000	3,02,300

Environment Monitoring Plan (post operation)**Monitoring Parameters and Frequency of Monitoring**

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx in the vicinity of the mine area. In the surrounding area covering project site only.	2 Stations	Six Monthly
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly

3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Undertaking submitted affirming:

- a. Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- b. The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard.
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One-day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haulroads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- k. Personal protective equipment such as safety jacket, helmet & goggles to protect from injury will be provided to working personnel.
- l. Transportation from the river bed to the NH-320G will be done using the existing road.
- m. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.
- n. Wet sand will not be transported.

SOLID WASTE MANAGEMENT

No solid waste is generated during the course of mining.

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- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Sewage from rest shelter would be treated in Septic Tank soakpit.
- There is no other source for generation or discharge of trade effluent.

AIR QUALITY MANAGEMENT

Sand will be mined manually. No mining equipment would be needed. However, diesel operated tippers/tractors would be used for transportation of sand from mine to stockyard.

OPERATION OF DIESEL EQUIPMENT'S –They generate Noxious gases. It will be ensured that all transport vehicles would be repaired & maintained regularly.

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MOVEMENT OF TIPPERS ON ROAD –Movement of tippers on road generate dust. For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on Haul road by using water tankers.
- ✓ Regular repair of Haul road
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- ✓ Transport tippers/traders moving on public road will be covered with tarpaulin.

RISK ASSOCIATED WITH PROJECT ACTIVITIES AND THEIR MITIGATION MEASURES ARE DISCUSSED BELOW:

ROAD ACCIDENTS

Transportation of sand along the public road may cause accident which may cause injury.
Preventive Measures;

- Ensure speed limit for the haulage vehicle for 40KMPH.
- Regular maintenance of haulage road
- Appropriate navigational signs informing sensitive area like school and habitation
- Regular maintenance of the vehicles.

DUST GENERATION

- ✓ No drilling involved
- ✓ Dust mask would be supplied to workers
- ✓ Regular sprinkling of water on road

NOISE GENERATION

Source of noise pollution in the project would be movement of tippers / tractors transporting sand from mine to stock yard. In general tippers / tractors produce a noise level of 75 – 90 (A) measured at distance of 3m from the source.

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- Transportation activities would be confined during day time only.

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During digging and handling of sand i.e. loading, transportation and unloading of sand, workmen would be exposed to inhalation of fine dust particles. This poses a health hazard.

PREVENTIVE MEASURES

Following mitigation measures would be taken to minimize this impact on health

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- ✓ Tree plantation on both sides of haulage road.
- ✓ Tippers / Tractors carrying sand would be covered.
- ✓ Mask would be provided to workmen employed for digging, loading, transportation and unloading activities

ACCIDENT AT SITE

This is a project with only source of accident at site would be movement of tippers/tractors within mine site for transportation of sand.

PREVENTIVE MEASURES

Following mitigation measures would be taken to minimise risk of road accident-

- ✓ Separate alignment for movement of loaded vehicles coming out of mine site
- ✓ Ensure speed restriction of 10 KMPH within mine site for incoming and outgoing tippers
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- ✓ No overtaking of transportation vehicles within mine site
- ✓ Proper maintenance of haulage roads

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

- Mine road shall be made smooth regularly with a roadroller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR1961.

- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
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- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting/operating.
- Only trained drivers will be hired

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 23, 24, 25, 26 & 27.07.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith following specific condition :-

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- Pre-monsoon data of current year is to be included in final EIA report.
- Satellite imagery with Geo-Cordinates of pre-monsoon (current year) to be included in the final EIA report.

10. Anandpur Sand Ghat of Jharkhand State Mineral Development Corporation Ltd. (JSMDC),
Mauza : Anandpur, Anchal : Anandpur, Thana : Manoharpur, Distt.: West Singhbhum,
Jharkhand (12.1 Ha).

(Proposal no.: SIA/JH/MIN/488329/2024)

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

This is a new project which has been taken for appraisal on 25.07.2024.

Project Category : B1 – 1(a) Mining of Minerals : Application for Terms of Reference (ToR)
as per EIA notification, 2006.

ToR Application for: Proposed Capacity- 47,805cum/annum or 1,24,771TPA (dry basis)

PROJECT AND LOCATION DETAILS:

S.No.	Parameter	Details	
1	Project Name	Anandpur Sand Ghat	
2	Lessee:	M/s Jharkhand State Mineral Development Corporation Ltd. (A Govt. of Jharkhand Enterprises)	
3	Lessee Address	Khanij Nigam Bhawan, Doranda, Ranchi – 834002 (Jharkhand)	
4	Lease Area	Ha. 12.1 Ha.	Acres – 29.89 Acres
5	Type of Land	Non-Forest Government Land (River Bed)	
6	Project Cost	Rs 54.33 Lakhs	
7	EMP Budget	Capital: Rs 23.78 Lakhs	Recurring: 5.08 lakhs / year
8	New or Expansion	New	
9	Mineable Reserves for 1st year & subsequent year 60% of Replenished quantity	CUM: 47,805 cum (Dry Basis)	
10	Mine Life	Life of Mine/Lease Period, as per provision of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.	
11	Man power	126	
12	Water Requirement	Total water requirement is about 17.6 KLD= 5.6 KLD (Drinking Water & Domestic Uses, 126 persons @45 LPCD) + 4 KLD (Water sprinkling) + 8 KLD (plantation).	
13	Water Source	By Authorised hired tankers	
14	DG Set / power	NA	
15	Crusher	NA	
16	Nearest Water Body	Koel River (Project Site)	
17	Nearest Habitation	Anandpur, at 1.2 KM in NW direction.	
18	Nearest Rail Station	Manoharpur Railway station is about 9.63 Km in S direction	

19	Nearest Air Port	Ranchi Airport is about 118 Km in North in direction.		
20	Nearest Forest	Name of Places	Distance (Km)	Direction
		RUNGIKOCHA P.F.	9	NNE
		MORANG P.F.	10	NW
		CHAURARAPA P.F.	8.8	SW
		ANKUA R.F.	13.7	S
		AMBIA R.F.	11.7	ESE
21	Road Highways	NH-320G is about 1.25 km in W direction		
22	Seismic zone	Zone II as per seismic zone map of India		

CO-ORDINATES

Pillar No.	Latitude	Longitude	Pillar No.	Latitude	Longitude
1	22°27'23.02"N	85°11'4.00"E	10	22°27'50.42"N	85°11'16.31"E
2	22°27'25.89"N	85°10'59.92"E	11	22°27'48.30"N	85°11'18.95"E
3	22°27'27.33"N	85°11'1.01"E	12	22°27'45.23"N	85°11'16.96"E
4	22°27'30.51"N	85°11'2.79"E	13	22°27'42.42"N	85°11'15.43"E
5	22°27'33.62"N	85°11'4.51"E	14	22°27'37.88"N	85°11'12.55"E
6	22°27'36.80"N	85°11'6.17"E	15	22°27'32.19"N	85°11'9.80"E
7	22°27'39.89"N	85°11'8.08"E	16	22°27'29.35"N	85°11'7.98"E
8	22°27'44.03"N	85°11'11.30"E	17	22°27'26.34"N	85°11'5.93"E
9	22°27'47.57"N	85°11'13.96"E			

LAND DETAILS

Mauza	Khata no.	Plot no.
Anandpur	568	2910 & 2909 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Auction letter has been issued by Joint Secretary, Mines & Geology Deptt., Govt. of Jharkhand vide letter no. Kha.ni.-(Vividh)-117/2017-2090/M, dated 30.09.2022.

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		According to provisions in Jharkhand State sand Mining Policy and its amendment. JSMDCLtd. has been nominated as nodal agency for operating sand mines in category II.
2	CO	: The CO, Anandpur vide letter no. 23, dated 28.01.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyani & Register II.
3	DMO	: DMO, West Singhbhum, Chaibasa vide memo no. 461/M, dated 28.05.2024 certified that no other balughat exists within 500 m radius from proposed project site.
4	DFO Wild Life	: Deputy Conservator of Forest & Field Director Elephant Project, Jamshedpur vide memo no. 1151, dated 13.07.2024 certified that the proposed project site is outside Eco Sensitive Zone of Dalma Wildlife Sanctuary.
5	DFO Territorial	: Division Forest Officer, Porahat Forest Division, Chaibasa vide letter no. 57, dated 12.01.2023 certified that the distance of forest is 1200 meter from proposed project site.
6	DSR	: This project is mentioned in approved DSR of West Singhbhum District (Sl. no. KR5, Page no. 63).
7	Gram Sabha	: BDO, Anandpur vide letter no. 323, dated 10.06.2024 informed that Gram Sabha conducted on 08.06.2024.
8	Mine Plan Approval	: Approved by District Mining Officer, Chaibasa, West Singhbhum vide Memo No. 456/M, dated 27.05.2024.
9	Qualified Person	: Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

WORKING DETAILS

1	Mining Method	: Opencast Manual Method
2	Quarry Area	: 12.1Ha
3	Waste Generation	: No waste Generation
4	Stripping Ratio	: 0:0
5	Working Days	: 200 days
6	Benches: size & No	: NA
7	Elevation of Mine	: 213 m AMSL to 212.02 m AMSL
8	Ground Level Elevation	: 212.02 m AMSL
9	Ultimate Working Depth	: 0.98 m
10	Water Table	: NA
11	Topography of Mine	: Area represents gently sloping land.
12	Explosive Requirement	: None. No blasting required
13	Diesel/Fuel Requirement	: Not required for mining.

PRODUCTIONDETAILS

Year	Total Area(Ha)	Thickness(m)	Average Replenishment Rate As per Approved DSR	Volume(cum) 60%	Tonnage factor As per Approved DSR	Quantity in ton 60%
1st	8.13	0.98	100%	47,805	2.61	1,24,771

LAND USE

GM Land	Area in Hectares
Private Land	Nil
Excavated Zone	8.13
Safety Zone	3.97
Total Area	12.10

ENVIRONMENT MANAGEMENT**GREEN BELT DEVELOPMENT**

Village	No of plants	Area consider for plantation (length of approach road)	Species of plant
Anandpur Sand Ghat Total area of 12.10 ha in River - Koel	2664	2.0 Km Approach Road $2000/3=666$ plants $666*4= 2664$ plants (Two row plantations along with the both side of road)	Anjan, Sahjan, Mango, Jackfruit, Jamun, Sal, Gulmohar, Neem, Pipal, Arjun etc other local Fruits Bearing Tress

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

Environment Management Budget

Sr. No.	Particulars	Budget Provisions (Rs)	
		Capital	Recurring

1	Water Requirement	Cost for water for water sprinkling and greenbelt for 200 days @12 KLD Considering 3 tankers @5KL each tanker capacity	30,000	2,40,000
2	Road Maintenance & Monitoring	Prepare & Maintenance of approach road (Max. Road length 2 Km, Width 4.0m) @500Rs/ Meter.	10,00,000	1,00,000
		Monitoring twice a year (Air, Soil, Water & Noise twice a year)	-	1,00,000
3	Plantation Scheme	Green Belt Development along the road (for eac plants including hedges and fences) 2664 Plants @ INR 500/Plant	13,32,000	66,600
4	Solid Waste Management	Bins	5,000	1,000
		Transport of Dry Waste/Wet Waste	5,000	
		Signage and Caution Board	6,000	1,000
Total EMP Budget			23,78,000	5,08,600

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

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

Undertaking submitted affirming:

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

- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- k. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
- l. Mining will be restricted upto 3 meter.
- m. Transportation from the river bed to the NH-320G will be done using the existing road.
- n. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.
- o. Wet sand will not be transported.

SOLID WASTE MANAGEMENT

No solid waste is generated during the course of mining.

WATER QUALITY MANAGEMENT

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Sewage from rest shelter would be treated in Septic Tank soakpit.
- There is no other source for generation or discharge of tradeeffluent.

AIR QUALITY MANAGEMENT

Sand will be mined manually. No mining equipment would be needed. However, diesel operated tippers/tractors would be used for transportation of sand from mine to stockyard.

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OPERATION OF DIESEL EQUIPMENT'S –They generate Noxious gases. It will be ensured that all transport vehicles would be repaired & maintained regularly.

LOADING OF PRODUCT ON TIPPERS –Water will be sprinkled on blasted Sand mass before they are loaded to trucks for transport.

MOVEMENT OF TIPPERS ON ROAD –Movement of tippers on road generate dust. For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on Haul road by using water tankers.
- ✓ Regular repair of Haul road
- ✓ All Trucks carrying Sand outside lease area will have PUC certificate.
- ✓ Transport tippers/traders moving on public road will be covered with tarpaulin.

RISK ASSOCIATED WITH PROJECT ACTIVITIES AND THEIR MITIGATION MEASURES ARE DISCUSSED BELOW:

ROAD ACCIDENTS

Transportation of sand along the public road may cause accident which may cause injury.
Preventive Measures;

- Ensure speed limit for the haulage vehicle for 40KMPH.
- Regular maintenance of haulage road
- Appropriate navigational signs informing sensitive area like school and habitation
- Regular maintenance of the vehicles.

DUST GENERATION

- ✓ No drilling involved
- ✓ Dust mass would be supplied to workers
- ✓ Regular sprinkling of water on road

NOISE GENERATION

Source of noise pollution in the project would be movement of tippers / tractors transporting sand from mine to stock yard. In general tippers / tractors produce a noise level of 75 – 90 (A) measured at distance of 3m from the source.

PREVENTIVE MEASURES

- ✓ Transportation activities would be confined during day time only.
- ✓ There would be a speed limit of 40 kmph for tippers. Higher is speed higher is noise.

- ✓ Regular repair and maintenance of tippers/tractors.
- ✓ Plantation on both sides of haulage road.
- ✓ Tippers having PUC certified will be allowed to be used for sand transportation.

HEALTH HAZARDS

During digging and handling of sand i.e. loading, transportation and unloading of sand, workmen would be exposed to inhalation of fine dust particles. This poses a health hazard.

PREVENTIVE MEASURES

Following mitigation measures would be taken to minimize this impact on health

- ✓ Regular water sprinkling on haulage roads.
- ✓ Tree plantation on both sides of haulage road.
- ✓ Tippers / Tractors carrying sand would be covered.
- ✓ Mask would be provided to workmen employed for digging, loading, transportation and unloading activities

ACCIDENT AT SITE

This is a project with only source of accident at site would be movement of tippers/tractors within mine site for transportation of sand.

PREVENTIVE MEASURES

Following mitigation measures would be taken to minimise risk of road accident-

- ✓ Separate alignment for movement of loaded vehicles coming out of mine site
- ✓ Ensure speed restriction of 10 KMPH within mine site for incoming and outgoing tippers
- ✓ Regular maintenance and repair of haulage vehicles employed for sand transportation
- ✓ No overtaking of transportation vehicles within mine site
- ✓ Proper maintenance of haulage roads

TRANSPORTATION

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

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.

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- Mine roads will be designed as per the specifications given under MMR1961.
- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operation.
- Only trained drivers will be hired.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 23, 24, 25, 26 & 27.07.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III along with following specific condition :-

- In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- Pre-monsoon data of current year is to be included in final EIA report.
- Satellite imagery with Geo-Cordinates of pre-monsoon (current year) to be included in the final EIA report.

11. Khetko - Chalkari Sand Ghat of Jharkhand State Mineral Development Corporation Ltd. (JSMDC), Mauza : Khetko & Chalkari, Block : Peterwar, Distt.: Bokaro, Jharkhand (26.14 Ha).

(Proposal no.: SIA/JH/MIN/484433/2024)

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

This is a new project which has been taken for appraisal on 25.07.2024.

Project Category : B1 – 1(a) Mining of Minerals : Application for Terms of Reference (ToR) as per EIA notification, 2006.

PROJECT AND LOCATION DETAILS:

S.No.	Parameter	Details	
1	Project Name	Khetko – Chalkari Sand Ghat	
2	Lessee:	M/s Jharkhand State Mineral Development Corporation Ltd. (A Govt. of Jharkhand Enterprises)	
3	Lessee Address	Khanij Nigam Bhawan, Doranda, Ranchi – 834002 (Jharkhand)	
4	Lease Area	Ha. 26.14 Ha.	Acres – 64.56 Acres
5	Type of Land	Non Forest Government Land (River Bed)	
6	Project Cost	Rs 2.05Crore	
7	EMP Budget	Capital: Rs 35.41 Lakhs	Recurring: 4.28 lakhs / year
8	New or Expansion	New	
9	Mineable Reserves for 1st year & subsequent year 60% of Replenished quantity	CUM: 2,19,576 cum (Dry Basis)	
10	Mine Life	Life of Mine/Lease Period, as per provision of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.	
11	Man power	578	
12	Water Requirement	Total water requirement is about 36.8 KLD= 26 KLD (Drinking Water & Domestic Uses, 578 persons @45 LPCD) + 3.6 KLD (Water sprinkling) + 7.2 KLD (plantation)	
13	Water Source	By Authorised hired tankers	
14	DG Set / power	NA	
15	Crusher	NA	
16	Nearest Water Body	DamodarRiver (Project Site)	
17	Nearest Habitation	Khetko Village, at 0.33 KM in WNW direction.	
18	Nearest Rail Station	Jarangdih Train station is about 1.67 Km in NE direction	

19	Nearest Air Port	Bokaro Airport is about 25.8 Km in ESE direction.		
20	Nearest Forest	Name of Places	Distance (Km)	Direction
		Pipilio P.F.	7.6	NNW
		Gandhinagar P.F.	11.46	NE
		Angwali P.F.	5.6	SE
		Tenughat P.F.	10.72	WSW
21	Road Highways	Jarangdih Road is about 1.88 km in N direction NH-320D is about 11.4 km in S direction		
22	Seismic zone	Zone III as per seismic zone map of India		

CO-ORDINATES

Pillar No.	Latitude	Longitude	Pillar No.	Latitude	Longitude
1	23°45'24.958"N	85°56'11.504"E	16	23°45'27.832"N	85°55'09.310"E
2	23°45'23.119"N	85°56'12.664"E	17	23°45'24.54"N	85°55'12.71"E
3	23°45'20.95"N	85°56'14.21"E	18	23°45'23.00"N	85°55'15.90"E
4	23°45'19.62"N	85°56'15.15"E	19	23°45'21.74"N	85°55'19.40"E
5	23°45'16.24"N	85°56'6.30"E	20	23°45'20.55"N	85°55'22.14"E
6	23°45'11.81"N	85°55'54.44"E	21	23°45'18.98"N	85°55'26.81"E
7	23°45'11.08"N	85°55'49.10"E	22	23°45'16.05"N	85°55'38.33"E
8	23°45'11.00"N	85°55'43.30"E	23	23°45'15.05"N	85°55'44.09"E
9	23°45'11.23"N	85°55'40.08"E	24	23°45'16.05"N	85°55'51.12"E
10	23°45'11.72"N	85°55'36.46"E	25	23°45'16.82"N	85°55'55.68"E
11	23°45'13.60"N	85°55'29.30"E	26	23°45'18.71"N	85°56'0.70"E
12	23°45'17.19"N	85°55'19.06"E	27	23°45'19.09"N	85°56'2.29"E
13	23°45'20.60"N	85°55'13.26"E	28	23°45'19.86"N	85°56'4.69"E
14	23°45'23.071"N	85°55'8.281"E	29	23°45'21.35"N	85°56'6.82"E
15	23°45'25.781"N	85°55'08.867"E	30	23°45'23.40"N	85°56'9.62"E

LAND DETAILS

Mauza	Khata no.	Plot no.
Khetko	120	2470
Chalkari	225	4149

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Auction letter has been issued by Joint Secretary, Mines & Geology Deptt., Govt. of Jharkhand vide letter no. Kha.nl.-(Vividh)-117/2017-2090/M, dated 30.09.2022.

		According to provisions in Jharkhand State sand Mining Policy and its amendment. JSMDCLtd. has been nominated as nodal agency for operating sand mines in category II.
2	CO	: The CO, Peterwar vide letter no. 811, dated 19.07.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyani & Register II. With regard to Khata number & Plot number involved in this project the DMO, Bokaro has certified vide letter no. 1095/Khanan, dated 22.07.2024.
3	DMO	: DMO, Bokaro vide letter no. 904/Khanan, dated 12.06.2024 certified that no other balughat exists within 500 m radius from proposed project site.
4	DFO Wild Life	: DFO, Wildlife Division, Hazaribag vide letter no. 883, dated 17.05.2024 certified that the proposed project site is outside Eco Sensitive Zone of Topchanchi Wildlife Sanctuary.
5	DFO Territorial	: Division Forest Officer, Bokaro Forest Division vide letter no. 654, dated 10.03.2023 certified that the distance of forest is more than 250 meter from proposed project site.
6	DSR	: This project is mentioned in approved DSR of Bokaro District (Sl. no. 04, Page no. 72-73).
7	Gram Sabha	: BDO, Peterwar vide letter no. 962, dated 10.06.2024 informed that Gram Sabha conducted on 10.06.2024.
8	Mine Plan Approval	: Approved by District Mining Officer, Bokaro vide Memo No. 886/M, dated 08.06.2024.
9	Qualified Person	: Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

WORKING DETAILS

1	Mining Method	: Opencast Manual Method
2	Quarry Area	: 26.14Ha
3	Waste Generation	: No waste generation
4	Stripping Ratio	: 0:0
5	Working Days	: 200 days
6	Bench: size & No	: NA
7	Elevation of Mine	: 155 m AMSL to 153.6m AMSL
8	Ground Level Elevation	: 153.6 m AMSL
9	Ultimate Working Depth	: 1.4 m
10	Water Table	: NA
11	Topography of Mine	: Area represents gently sloping land.

12	Explosive Requirement	:	None. No blasting required
13	Diesel/Fuel Requirement	:	Not required for mining.

PRODUCTIONDETAILS

Year	Total Area(Ha)	Thickness(m)	Average Replenishment Rate As per Approved DSR	Volume(cum) 60%	Tonnage factor As per Approved DSR	Quantity in ton 60%
1st	26.14	1.4	100%	2,19,576	1.74	3,82,062

LAND USE

GM Land	Area in Hectares
Private Land	0.00
Proposed Mining Area (Govt. Bhu-jal Land)	26.14
Company land	00
Total Area	26.14

ENVIRONMENT MANAGEMENT

GREEN BELT DEVELOPMENT

Village	No of plants	Area consider for plantation (length of approach road)	Species of plant
Khetko&Chalkari Sand Ghat Total area of 26.14 ha in River - Damodar	2400	1.80 Km 1800/3=600 Plants 600x4=2400 Plants. Two row plantation along the both side road.	Anjan, Sahjan, Mango, Jackfruit, Jamun, Sal, Gulmohar, Neem, Pipal, Arjun etc other local Fruits Bearing Tress

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

Environment Management Budget

Sr. No.	Particulars		Budget Provisions (Rs)	
			Capital	Recurring
1	Water Requirement	Water sprinkling for outgoing and incoming transportation vehicles for	30,000	76,000

	&Other Requirements	haul road and Green Belt. Cost for 200 days for 3.8 KLD @5 KL tanker capacity, Rupees 500- per tanker		
2	Road Maintenance & Monitoring	Prepare & Maintenance of approach road (Max. Road length 3 Km, Width 4.0m) @500Rs. / Meter.	15,00,000	1,50,000
		Monitoring twice a year (Air, Soil, Water & Noise twice a year)	-	1,00,000
3	Plantation Scheme	Green Belt Development along the road (for each plants including hedges and fences) 4000 Plants @ INR 500/Plant	20,00,000	1,00,000
4	Solid Waste Management	Bins 10 nos.	5,000	1,000
		Transport of Dry Waste/Wet Waste		
		Signage and Caution Board	6,000	1,000
Total EMP Budget			35,41,000	4,28,000

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

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

Undertaking submitted affirming:

- Ground water will be used only for domestic purpose and not be used for any mining activities or any other use.
- The District Survey Report has been prepared by a competent authority. Project Authorities will abide by any directives issued by any court of law in future.
- If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard

- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
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- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Suitable safety protection measures shall be taken around the water bodies to prevent any human or animals falling in to the water bodies created at the end of life of the mine.
- k. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
- l. Transportation from the river bed to the NH-320G will be done using the existing road.
- m. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.
- n. Wet sand will not be transported.

SOLID WASTE MANAGEMENT

No solid waste is generated during the course of mining.

WATER QUALITY MANAGEMENT

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Sewage from rest shelter would be treated in Septic Tank soakpit.
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AIR QUALITY MANAGEMENT

Sand will be mined manually. No mining equipment would be needed. However, diesel operated tippers/tractors would be used for transportation of sand from mine to stockyard.

OPERATION OF DIESEL EQUIPMENT'S –They generate Noxious gases. It will be ensured that all transport vehicles would be repaired & maintained regularly.

LOADING OF PRODUCT ON TIPPERS –Water will be sprinkled on blasted Sand mass before they

are loaded to trucks for transport.

MOVEMENT OF TIPPERS ON ROAD – Movement of tippers on road generate dust. For mitigation of this pollution following measures will be taken

- ✓ Regular water sprinkling on Haul road by using water tankers.
- ✓ Regular repair of Haul road
- ✓ All Trucks carrying Sand outside lease area will have PUC certificate.
- ✓ Transport tippers/traders moving on public road will be covered with tarpaulin.

RISK ASSOCIATED WITH PROJECT ACTIVITIES AND THEIR MITIGATION MEASURES ARE DISCUSSED BELOW:

ROAD ACCIDENTS

Transportation of sand along the public road may cause accident which may cause injury.
Preventive Measures;

- Ensure speed limit for the haulage vehicle for 40KMPH.
- Regular maintenance of haulage road
- Appropriate navigational signs informing sensitive area like school and habitation
- Regular maintenance of the vehicles.

DUST GENERATION

- ✓ No drilling involved
- ✓ Dust mass would be supplied to workers
- ✓ Regular sprinkling of water on road

NOISE GENERATION

Source of noise pollution in the project would be movement of tippers / tractors transporting sand from mine to stock yard. In general tippers / tractors produce a noise level of 75 – 90 (A) measured at distance of 3m from the source.

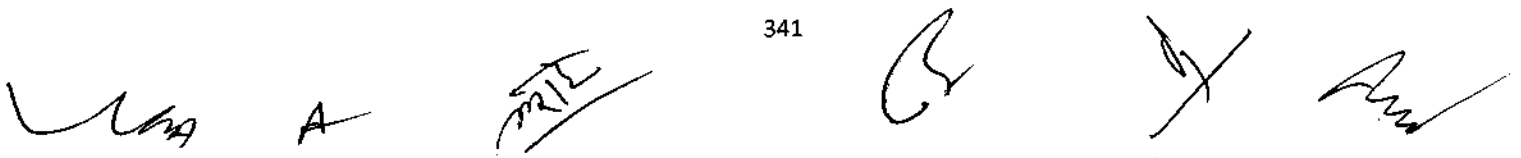
PREVENTIVE MEASURES

- ✓ Transportation activities would be confined during day time only.
- ✓ There would be a speed limit of 40 kmph for tippers. Higher is speed higher is noise.
- ✓ Regular repair and maintenance of tippers/tractors.
- ✓ Plantation on both sides of haulage road.
- ✓ Tippers having PUC certified will be allowed to be used for sand transportation.

HEALTH HAZARDS

During digging and handling of sand i.e. loading, transportation and unloading of sand, workmen would be exposed to inhalation of fine dust particles. This poses a health hazard.

PREVENTIVE MEASURES

The bottom of the page features several handwritten signatures and initials in black ink. From left to right, there is a signature that appears to be 'Uma', a single letter 'A', a signature that looks like 'MTE', a large stylized 'B', a signature that looks like 'J', and a signature that looks like 'Amu'.

Following mitigation measures would be taken to minimize this impact on health

- ✓ Regular water sprinkling on haulageroads.
- ✓ Tree plantation on both sides of haulageroad.
- ✓ Tippers / Tractors carrying sand would becovered.
- ✓ Mask would be provided to workmen employed for digging, loading, transportation and unloadingactivities

ACCIDENT AT SITE

This is a project with only source of accident at site would be movement of tippers/tractors within mine site for transportation of sand.

PREVENTIVE MEASURES

Following mitigation measures would be taken to minimise risk of road accident-

- ✓ Separate alignment for movement of loaded vehicles coming out of minesite
- ✓ Ensure speed restriction of 10 KMPH within mine site for incoming and outgoing tippers
- ✓ Regular maintenance and repair of haulage vehicles employed for sand transportation
- ✓ No overtaking of transportation vehicles within minesite
- ✓ Proper maintenance of haulageroads

TRANSPORTATION

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

- ✓ Mine road shall be made smooth regularly with a roadroller.
- ✓ Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- ✓ Mine road will be made sufficiently wide to keep two-waytraffic.
- ✓ Mine roads will be designed as per the specifications given under MMR1961.
- ✓ Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- ✓ All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- ✓ The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- ✓ Navigation signs will be provided at each and every turning point up to the main road (whereverrequired)

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

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 23, 24, 25, 26 & 27.07.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith following specific condition :-

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- II. Pre-monsoon data of current year is to be included in final EIA report.
- III. Satellite imagery with Geo-Cordinates of pre-monsoon (current year) to be included in the final EIA report.

12. Dangapara Stone Mine of M/s Bhagat and Sons (Partners : Shri Jay Shankar Bhagat & Shri Kali Shankar Bhagat), Village : Dangapara, Thana no. : 28, Distt.: Pakur, Jharkhand (2.87 Ha).

(Proposal no.: SIA/JH/MIN/488910/2024)

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

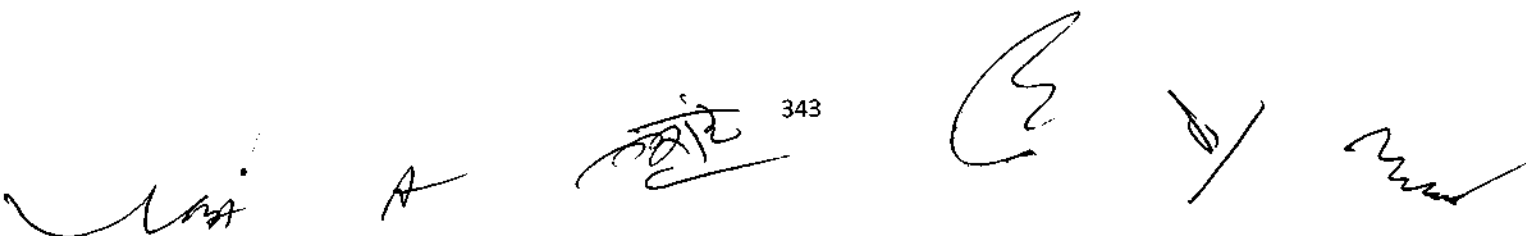
This is a new project which has been listed for appraisal on 25.07.2024. But in absence of proper certificate of DMO, Pakur it could not be appraised on same day.

The PAs has provided proper certificate of DMO, Pakur and requested vide letter dated 27.07.2024 for the appraisal of the project.

Accordingly, the project was taken up for appraisal on 27.07.2024.

Project Category : B2 – 1(a) Mining of Minerals : Application for Environmental Clearance.

EC Application for: Proposed Capacity: 46,200 Cum Per Annum or 1,24,740 Ton Per Annum

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Project and Location Details

S. No	Parameter	Details
1	Project Name	: Dangapara Stone Mine (M/s Bhagat and Sons)
2	Partner's	: Shri Jay Shankar Bhagat and Shri Kali Shanker Bhagat
3	Lessee Address	: R/O- Torai, Thana- Hiranpur, District-Pakur, Jharkhand-816107
4	Lease Area	: Ha: 2.87Ha Acres: 7.09Acres
5	Type of Land	: Raiyati Land
6	Project Cost	: 65Lakhs
7	EMP Budget	: Capital: 24.24Lakhs Recurring: 5.5Lakhs / year
8	New or Expansion	: New
9	Mineable Reserves	: 4,70,292 Cum 12,69,788 Tonnes
10	Mine Life	: 10.0 Years
11	Man power	: 28persons
12	Water Requirement	: Total water requirement is about 9.84 KLD=0.84 (Drinking Water & Domestic Uses) + 5 KLD (Water sprinkling) + 4 KLD (plantation).
13	Water Source	: by Authorised hired water tankers
14	DG Set / power	: 125KVA (Temporary setup for Backup)
15	Crusher	: No
16	Nearest Water Body	: Darajmarh Pond is about 1.62 km in WNWdirection.
17	Nearest Habitation	: Dangaparaisabout 0.88 km inNorthdirection
18	Nearest Rail Station	: Rajhura Railway Station is about 12.4 Km in ENE direction.
19	Nearest Airport	: Deoghar Airport is about 103.13 Km in West direction.
20	Nearest Forest	: Kumarbhaja P.F. is about9.18 km inWNW direction.
21	Road & Highways	: NH-133A is about 5.93 km in FNE direction.

CO-ORDINATES

S. No.	Latitude	Longitude	S. No.	Latitude	Longitude
1	24° 38'26.388"N	87° 41'49.192"E	16	24° 38'19.840"N	87° 41'49.062"E
2	24° 38'25.499"N	87° 41'48.917"E	17	24° 38'20.827"N	87° 41'49.083"E
3	24° 38'24.702"N	87° 41'49.662"E	18	24° 38'21.254"N	87° 41'48.353"E
4	24° 38'23.579"N	87° 41'49.367"E	19	24° 38'22.071"N	87° 41'48.677"E
5	24° 38'22.688"N	87° 41'48.298"E	20	24° 38'21.631"N	87° 41'49.989"E
6	24° 38'23.469"N	87° 41'46.996"E	21	24° 38'21.208"N	87° 41'51.658"E
7	24° 38'22.701"N	87° 41'46.461"E	22	24° 38'21.901"N	87° 41'52.059"E
8	24° 38'21.687"N	87° 41'47.243"E	23	24° 38'21.347"N	87° 41'52.457"E
9	24° 38'21.180"N	87° 41'47.373"E	24	24° 38'21.108"N	87° 41'53.128"E
10	24° 38'21.029"N	87° 41'46.688"E	25	24° 38'21.908"N	87° 41'54.147"E
11	24° 38'21.489"N	87° 41'45.865"E	26	24° 38'22.605"N	87° 41'55.449"E
12	24° 38'20.426"N	87° 41'45.372"E	27	24° 38'23.489"N	87° 41'56.816"E
13	24° 38'20.262"N	87° 41'47.356"E	28	24° 38'24.502"N	87° 41'55.183"E
14	24° 38'19.892"N	87° 41'47.299"E	29	24° 38'25.419"N	87° 41'53.057"E
15	24° 38'19.511"N	87° 41'48.641"E	30	24° 38'26.016"N	87° 41'51.205"E

LAND DETAILS

Khata no.	Plot no.
36	984 (P) & 985
17	986 (P)

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 860/M, dated 05.06.2024.
2	CO	:	The CO, Hiranpur vide letter no. 516/Ra., dated 10.12.2022 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyani & Register II and also mentioned that the habitation of 08 houses within 500 meters of proposed project site, accordingly PAs has submitted EMP for the same.
3	DMO	:	DMO, Pakur vide memo no. 924/M, dated 25.06.2024 certified that no other mining lease area exists within 500 m radius from proposed project site and total area is 7.09 Acre or 2.869 Ha.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 538, dated 18.04.2023 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide memo no. 969, dated 12.07.2023 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 15, Page no. 111).
7	Gram Sabha	:	BDO, Hiranpur vide letter no. 981/Vi., dated 28.12.2022 informed that Gram Sabha conducted on 10.12.2022.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 1100/M, dated 19.07.2024.
9	Qualified Person	:	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	OCM & Mechanised

2	Lease Area	:	7.09 ACRES / 2.87 HA	Life of Mine – 10.0 years
3	Waste Generation	:	5 years– 60,753CUM	
4	Stripping Ratio(t/m ³)	:	1:0.06	
5	Working Days	:	300	
6	Benches: size & No	:	6m x 6m	
7	Highest Elevation of lease Area	:	70 above MSL	
8	Lowest Elevation of lease Area	:	64 above MSL	
9	Ultimate Working Depth	:	30Meter	
10	Water Table	:	24 above MSL (40 BGL)	
11	Topography of Mine	:	Uneven land	
12	Explosive Requirement	:	Tentative 83.0kg/per day	
13	Diesel/Fuel requirement	:	568Litres per day	

Production Details

Year	Generation of Waste/O. B in cum	Production of Stone in Cum	Production of Stone in Tonnes	Grade/Uses
1st	29029	46137	124570	Construction & Road
2nd	31724	46200	124740	Construction & Road
3rd	00	46191	124716	Construction & Road
4th	00	46161	124635	Construction & Road
5th	00	46184	124697	Construction & Road
Total	60,753	2,30,873	6,23,358	
Stripping Ration in (m3/t)- 1:0.06				

Land Use

LAND USE PATTERN			
	Existing	First to Fifth Years	After Life of Mine
Category	Area in Hectares	Area in Hectares	Area in Hectares
Quarry	0.00	1.42	2.09 Ha area will be converted as water reservoir 470292cum
Haul Road	0.00	0.03	0.00
Proposed Crusher	0.00	0.00	0.00
Green belt in Safety Zone	0.00	0.78	0.78
Dump with Parapet wall & Garland drain	0.00	0.19	Top soil used for plantation and gritty soil will be used for backfilling& Haul road dressing
Total area in use	0.00	2.42	2.87
Balance unused area	2.87	0.45	0

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Balance used area	0.00	0.00	0
Total Applied Lease Area	2.87	2.87	2.87

ENVIRONMENT MANAGEMENT

Green Belt Development

S.No.	Location		Area/Length	No of Trees
1	Safety Zone	:	0.78 Ha	1248 trees @ 1600 trees per ha
2	Other Reclaimed Area	:	NIL	NIL
3	Haul /Approach Road	:	300 m	Road length-300 m Two Row Planation= 300 m/3.0m x 3.0 m Spacing = 100 Plant one side in one row 100 x 2 x 2 = 400 Plants
Total				1648

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

Environment Management Budget

PROPOSED FOR ENVIRONMENT MANAGEMENT COST			
S. No.	Mitigative measures to protect Environment	Capital Cost (In Lakh)	Recurring cost (In Lakh)
1.	Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine)	20.0	3.0
2.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @No. of plants 1648 x 500Rs.	8.24	2.0
3.	Environment Monitoring (Air, Water, Noise& Soil Monitoring)	Nil	0.50
	TOTAL	28.24	5.50

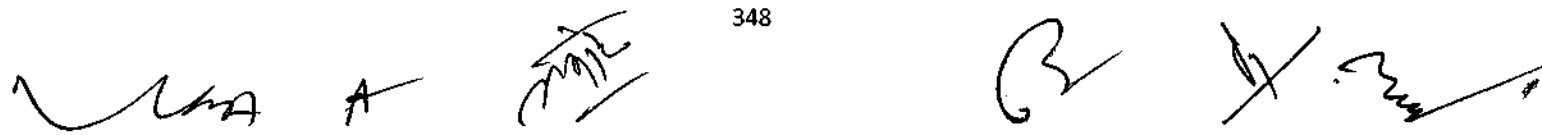
Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

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

Undertaking submitted affirming:

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



Solid Waste Management

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

Water Quality Management

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

Air Quality Management

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

Mitigation measures:

i. Use of Sharp Drill Bits

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

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

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

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

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

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

- ✓ Regular water sprinkling on Gaul road by using water Tankers.

- ✓ Regular repair of Haul road.
- ✓ All Trucks carrying stone outside lease area will have PUC certificate

RISK ASSESSMENT

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

Hazard identification & Risk Analysis in Stone Mining operation

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

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

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

Preventive Measures:

Slope Failure

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

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

- ✓ No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

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

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

Falls from the edge of a bench

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

Control Measures

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

Dust generation during drilling

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

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

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

Noise Generation during drilling

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

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

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

Blasting Operations

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

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

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

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

Handling of Explosives

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

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

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

Few conditions are listed below:

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

Health Hazards

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

The PPE shall be of good make and quality, wherever possible ISI certified, suitable for the hazard e.g. a dust respirator fitted with the correct filter to capture the particulate hazardous dust and maintained to recommended standards. As personal protective equipment only

affords limited protection it will only be used as a last resort and as an interim arrangement until other steps are taken to reduce the risk of personal injury to an acceptable level.

Accident at Site

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

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

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

Transportation

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

- ✓ Mine road shall be made smooth regularly with a road roller.
- ✓ Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- ✓ Mine road will be made sufficiently wide to keep two-way traffic.
- ✓ Mine roads will be designed as per the specifications given under MMR 1961.
- ✓ Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- ✓ All transportation within the mine lease area should be carried out directly under the supervision and control of management.

- ✓ The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- ✓ Navigation signs will be provided at each and every turning point up to the main road (wherever required).
- ✓ To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- ✓ Only trained drivers will be hired.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Dangapara Stone Mine of M/s Bhagat and Sons (Partners : Shri Jay Shankar Bhagat & Shri Kali Shankar Bhagat), Village : Dangapara, Thana no. : 28, Distt.: Pakur, Jharkhand (2.87 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

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

13. Manikdih Stone and Soil Mine of M/s A.K. Construction (Partners : Shri Ashok Kumar Dubey & Shri Ashok Kumar Pandey), Village : Manikdih, Thana no. : 96, P.S. : Manika, Distt.: Latehar, Jharkhand (0.891 Ha).

(Proposal no.: SIA/JH/MIN/486568/2024)

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

This is a new project which has been taken for appraisal on 25.07.2024.

Project Category : B2 – 1(a) Mining of Minerals : Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 59951Ton Per Annum(Stone) 10830Ton Per Annum(Soil)

Project and Location Details:

S. No	Parameter	Details
1	Project Name	: Manikdih Stone and Soil Mine (M/s A.K. Construction)
2	Partner's	: Partner- Sri Ashok Kumar Dubey & Sri Ashok Kumar Pandey
3	Lessee Address	: R/o Village- Baralota, Panki Road, P.O.- G.L.A. College Distt. - Palamu, Jharkhand- 822102
4	Lease Area	: 0.891Ha 2.20Acres
5	Type of Land	: Raiyati Land
6	Project Cost	: 42.50Lakhs
7	EMP Budget	: Capital: 16.64Lakhs Recurring: 3.0Lakhs / year
8	New or Expansion	: New
9	Mineable Reserves	: 1,19,889Cum (Stone) 3,14,195 Tonnes (Stone) 7677 Cum (Soil) 11,515 Tonnes (Soil)
10	Mine Life	: Four Year Eleven Month
11	Man power	: 22persons
12	Water Requirement	: Total water requirement is about 7.0 KLD= 0.72 (Drinking Water & Domestic Uses) + 3.02 KLD (Water sprinkling) + 3.26 KLD (plantation).
13	Water Source	: by Authorised hired water tankers
14	DG Set / power	: 125KVA (Temporary setup for Backup)
15	Crusher	: Yes (Capacity-50 ton/h) (Mobile Crusher)
16	Nearest Water Body	: Auranga River is about 5.98 km in W direction.
17	Nearest Habitation	: Village Manikdih is about 0.38 km in S direction
18	Nearest Rail Station	: Chhipadohar Railway Station is about 13 Km in WSW direction.
19	Nearest Airport	: Birsa Munda Airport is about 120 Km in ESE direction.
20	Nearest Forest	: Betla RF is about 9.42 km in W direction.
21	Road & Highways	: NH-39 is about 1.17 km in E direction.

CO-ORDINATES

S. No.	Latitude	Longitude	S. No.	Latitude	Longitude
1	23°52'3.888"N	84°18'59.801"E	19	23°52'2.453"N	84°18'59.717"E
2	23°52'3.910"N	84°18'59.228"E	20	23°52'2.992"N	84°19'0.513"E
3	23°52'4.290"N	84°18'58.203"E	21	23°52'2.564"N	84°19'0.672"E
4	23°52'4.193"N	84°18'57.551"E	22	23°52'2.160"N	84°19'1.190"E
5	23°52'3.648"N	84°18'57.737"E	23	23°52'1.910"N	84°19'1.377"E
6	23°52'3.658"N	84°18'58.286"E	24	23°52'1.391"N	84°19'1.893"E
7	23°52'3.304"N	84°18'58.352"E	25	23°52'1.330"N	84°19'2.104"E
8	23°52'2.864"N	84°18'58.361"E	26	23°52'2.027"N	84°19'2.118"E
9	23°52'3.385"N	84°18'57.427"E	27	23°52'1.921"N	84°19'2.748"E
10	23°52'2.492"N	84°18'56.990"E	28	23°52'1.875"N	84°19'3.060"E
11	23°52'2.039"N	84°18'56.943"E	29	23°52'2.519"N	84°19'3.253"E
12	23°52'1.757"N	84°18'56.583"E	30	23°52'2.545"N	84°19'2.867"E
13	23°52'0.831"N	84°18'56.393"E	31	23°52'2.841"N	84°19'1.934"E
14	23°52'0.752"N	84°18'56.970"E	32	23°52'2.988"N	84°19'1.423"E
15	23°52'0.633"N	84°18'59.001"E	33	23°52'2.871"N	84°19'1.259"E
16	23°52'0.933"N	84°18'59.336"E	34	23°52'3.120"N	84°19'0.705"E
17	23°52'1.502"N	84°18'59.422"E	35	23°52'3.844"N	84°18'0.339"E
18	23°52'1.999"N	84°18'59.048"E			

LAND DETAILS

Khata no.	Plot no.
48	290 (P)
22	294
31	295
29	296

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Latehar vide letter no. 1083/M, dated 26.10.2023.
2	CO	:	The CO, Manika vide letter no. 332, dated 21.06.2021 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyani.
3	DMO	:	DMO, Latehar vide memo no. 533/M, dated 03.07.2024 certified that no other mining lease area exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	Deputy Director, Palamau Tiger Project, North Division, Medininagar vide letter no. 924, dated 08.10.2021 certified that the proposed project site is outside Eco Sensitive Zone of Betla National Park & Palamau Wildlife Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Latehar vide letter no. 351, dated 24.02.2021 certified that the distance of reserved / protected forest land is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Latehar District (Sl. no. 10, Page no. 49).
7	Gram Sabha	:	BDO, Manika vide letter no. 1406, dated 01.12.2020 informed that Gram Sabha conducted on 11.10.2020.
8	Mine Plan Approval	:	Approved by Assistant Mining Officer –cum- Incharge District Mining Officer, Latehar vide Memo No. 532/M, dated 03.07.2024.
9	Qualified Person	:	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	OCM &Mechanised	
2	Lease Area	:	2.20 ACRES / 0.891 HA	Life of Mine – Four Year Eleven Month
3	Waste Generation	:	No waste generation	
4	Stripping Ratio(t/m ³)	:	1:0.1	
5	Working Days	:	300	
6	Bench: size & No	:	6m x 6m	
7	Highest Elevation of lease Area	:	342 Amsl	
8	Lowest Elevation of lease Area	:	339 Amsl	
9	Ultimate Working Depth	:	321 Amsl	
10	Water Table	:	309Amsl	

11	Topography of Mine	:	Uneven land
12	Explosive Requirement	:	Tentative 44kg/ day
13	Diesel/Fuel requirement		440Litres per day

Production Details

Year	Saleable of Soil in cum	Saleable of Soil in Ton	Production of Stone in Cum	Production of Stone in Tonnes	Grade/Uses
1st	7220	10830	21175	59290	Construction & Road
2nd	457	686	20938	58626	Construction & Road
3rd	00	00	21411	59951	Construction & Road
4th	00	00	21060	58968	Construction & Road
5th	00	00	19857	55600	Construction & Road
Total	7677	11515	104441	292435	
Stripping Ration in (m3/t)- 1:0.1					

Land Use

LAND USE PATTERN			
	Existing	First to Fifth Years	After Life of Mine
Category	Area in Hectares	Area in Hectares	Area in Hectares
Quarry	00	0.45	0.49 Ha Area will convert water reservoir (Water will be accumulated in pit 119889cum)
Haul Road	00	0.01	00
Proposed Mobile Crusher	00	0.03	Remove from lease area
Green belt in Safety Zone	00	0.40	0.40
Dump with Parapet wall & Garland drain	00	0.00	00
Reclaimed Area	00	00	00
Total area in use	00	0.89	0.89
Balance unused area	00	0.00	0.00
Total Applied Lease Area	0.89	0.89	0.89

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Place of Plantation	Spacing b/w plants	Total No. of Plants	Area Cover in Square Meters	Total Area in Ha.	Species
1st	Safety Zone	2.5 x 2.5	640	4000	0.40	Gulmohar,

	Haul Road	---	288	180Mtr 180/2.5=72Plant one side 72x4=288	---	Gular, Shami, Sagwan, Sakua Fruit Bearing Trees E.g- Mango, Jackfruit
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
Total			928	4000	0.40	

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

Environment Management Budget

PROPOSED FOR ENVIRONMENT MANAGEMENT COST			
S. No.	Mitigative measures to protect Environment	Capital Cost (In Lakh)	Recurring cost (In Lakh)
1.	Water Sprinkling/Air pollution control (Dust Suppression along haulage road and mine)	12	1.0
2.	Green belt development safety zone 7.5mtr and along the road (for each plant including hedges and fences) @No. of plants 928 x 500Rs.	4.64	1.5
3.	Environment Monitoring (Air, Water, Noise& Soil Monitoring)	Nil	0.50
	TOTAL	16.64	3.0

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx In the vicinity of	2 Stations	Six Monthly

	the mine area. In the surrounding area covering project site only.		
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Undertaking submitted affirming:

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

Solid Waste Management

The waste encountered during the mining operation is mainly. During Plan period gritty soil removed will be dumped at northern side with suitable precaution. Some quantity of the

removed gritty soil would also be used for road dressing and plantation. After conceptual period de-stoned area of quarry will be reclaimed to the extent possible.

Water Quality Management

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

Air Quality Management

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

Mitigation measures:

i. Use of Sharp Drill Bits

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

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

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

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

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

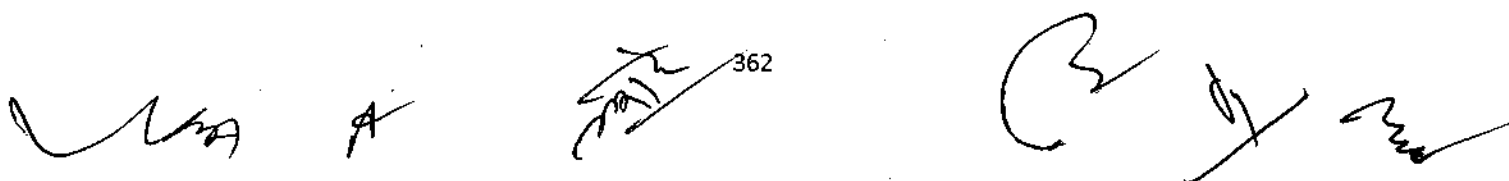
vi. **Movement of Trucks on Road** – Movement of Trucks on Road generate dust for mitigation of this pollution following measures will be taken:

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

RISK ASSESSMENT

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

Hazard identification & Risk Analysis in Stone Mining operation

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

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

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

Preventive Measures:

Slope Failure

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

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

Drilling Operations

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

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

Falls from the edge of a bench

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

Control Measures

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

Dust generation during drilling

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

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

Noise Generation during drilling

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

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

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

Blasting Operations

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

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

Handling of Explosives

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

- ✓ Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of

explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.

- ✓ Poorly designed shots can result in misfires, early ignition and flying rock.

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

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

Health Hazards

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

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

Accident at Site

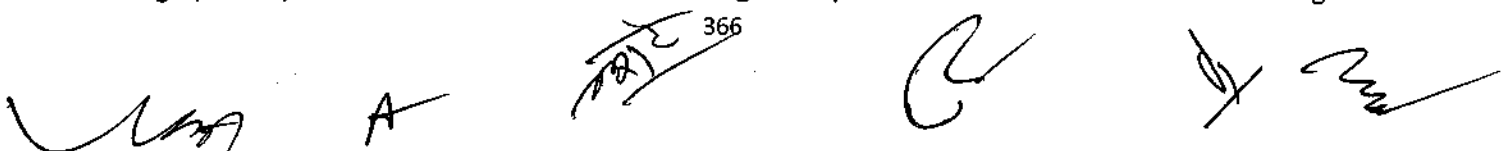
Identifying the hazards that come along with the presence of vehicles at the workplace (e.g. reversing operations, loading) can cause harm if not properly handled. Among some of the factors that may make vehicle accidents more likely are:

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

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

Transportation

The usual method of transporting minerals from the working face is by trucks /tippers/dumpers. Large earth moving equipment's are used for loading /transporting large quantity of mineral from a mine. During transportation of minerals in the mining

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area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

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

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF & CC O.M dated 12.12.18 decided that the proposal for Manikdih Stone and Soil Mine of M/s A.K. Construction (Partners : Shri Ashok Kumar Dubey & Shri Ashok Kumar Pandey), Village : Manikdih, Thana no. : 96, P.S. : Manika, Distt.: Latehar, Jharkhand (0.891 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II along with following specific conditions :

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- V. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted with 6 monthly compliance report with Geo-Tagged photographs.
- VI. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted with 6 monthly compliance report.
- VII. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.

14. Banpurwa Stone Deposit -1 of M/s Jai Mahakal Mining (Partners : Shri Sachchida Nand Singh & Shri Vyas Singh), Mauza : Banpurwa, Thana : Garhwa, Distt.: Garhwa, Jharkhand (2.428 Ha).

(Proposal no.: SIA/JH/MIN/486716/2024)

The DSR of Garhwa District was approved by SEIAA, Jharkhand on 29.10.2023 as per recommendation of SEAC based on the proposal of DSR submitted by DC, Garhwa duly authenticated by Sub-Divisional Committee.

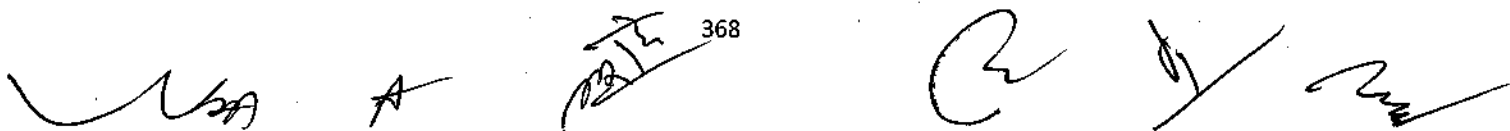
The above project is not a part of the approved DSR as mentioned above.

The DC-cum-District Magistrate, Garhwa vide letter no. 458/M, dated 07.06.2024 addressed to Member Secretary, SEIAA has confirmed that the above project was not included in the DSR which was submitted to SEIAA for approval.

He has further requested that the above project may be considered as a part of the present DSR and also stated that this project will be included in the DSR in future revision.

Hence, SEAC is of the view that SEIAA may request the DC, Garhwa to submit his proposal for consideration of revised DSR including all the other left out potential mining areas for approval to SEIAA.

This project could not be taken up for consideration for grant of EC as the project is not a part of the present approved DSR.

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

(Proposal no.: SIA/JH/MIN/486488/2024)

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

This is a new project which has been taken for appraisal on 25.07.2024.

Project Category : B1 – 1(a) Mining of Minerals : Application for Terms of Reference (ToR) as per EIA notification, 2006.

ToR Application for: Proposed Capacity:40347 Cum/Annum/1,08,937Ton/Annum

Project and Location Details:

S. No	Parameter	Details		
1	Project Name	:	Tangidaha Stone Mine (M/s N.N Stone Works)	
2	Partner's	:	Shri Nabiut Shekh and Nurmahammad Sekh.	
3	Lessee Address	:	R/O- Gram- Jhikarhati West, VTC - Jhikarhati P.O.- Jhikarhati, District- Pakur, Jharkhand.	
4	Lease Area	:	2.34Ha	5.78Acres
5	Type of Land	:	Raiyati Land	
6	Project Cost	:	57 Lakhs	
7	EMP Budget	:	Capital: 28.68Lakhs	Recurring: 7.28Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	4,01,970Cum	10,85,319Ton
10	Mine Life	:	10 Years	
11	Man power	:	24 persons	
12	Water Requirement	:	Total water requirement is about 7.69 KLD=0.69 KLD (Drinking & Domestic Uses) + 4.0 (Plantation) KLD + 3.0 KLD (Dust Suppression).	
13	Water Source	:	By Authorised hired water tankers	
14	DG Set / power	:	125 KVA (Temporary setup for Backup)	
15	Crusher	:	Not Proposed	
16	Nearest Water Body	:	Kalupara Village Pond is about 0.58 km in ENEdirection.	
17	Nearest Habitation	:	Tangidaha Village isabout 0.39 km inWSWdirection	
18	Nearest Rail Station	:	Nagarbani Railway station is about 14.5 km in ESE direction.	
19	Nearest Airport	:	Deoghar Airport is about 104.7 km in W direction.	
20	Nearest Forest	:	Forest Name	Distance (Km)
			GANROPAHARI P.F.	7.85
				Direction
				NW

			AMIRJOLA P.F.	14.6	W
			BELPAHARI P.F.	4.08	SW
21	Nearest State Highway/ National highway	:	NH-133A is about 10.67 km in NNE direction. SH – 18 is about 14.04 km in WNW direction. SH – 7 is about 14.04 km in E direction.		

CO-ORDINATES:

S. No.	Latitude	Longitude	S. No.	Latitude	Longitude
1	24° 33' 39.224" N	87° 43' 41.432" E	13	24° 33' 34.310" N	87° 43' 44.189" E
2	24° 33' 39.481" N	87° 43' 41.122" E	14	24° 33' 34.194" N	87° 43' 44.661" E
3	24° 33' 38.592" N	87° 43' 39.987" E	15	24° 33' 35.416" N	87° 43' 45.384" E
4	24° 33' 37.992" N	87° 43' 39.002" E	16	24° 33' 35.669" N	87° 43' 45.151" E
5	24° 33' 37.093" N	87° 43' 37.631" E	17	24° 33' 36.307" N	87° 43' 45.290" E
6	24° 33' 35.981" N	87° 43' 36.327" E	18	24° 33' 37.101" N	87° 43' 45.329" E
7	24° 33' 35.705" N	87° 43' 36.744" E	19	24° 33' 37.247" N	87° 43' 44.032" E
8	24° 33' 35.530" N	87° 43' 38.079" E	20	24° 33' 37.624" N	87° 43' 43.724" E
9	24° 33' 35.271" N	87° 43' 40.060" E	21	24° 33' 37.967" N	87° 43' 43.064" E
10	24° 33' 35.022" N	87° 43' 41.954" E	22	24° 33' 38.753" N	87° 43' 42.064" E
11	24° 33' 34.862" N	87° 43' 43.196" E	23	24° 33' 39.534" N	87° 43' 42.556" E
12	24° 33' 34.718" N	87° 43' 43.642" E			

LAND DETAILS

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

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 397/M, dated 20.03.2024.
2	CO	:	The CO, Maheshpur vide letter no. 1195/Ra, dated 14.12.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatyan & Register II and also mentioned that the habitation of 13-14 house at a distance of 280 meters of proposed project site.
3	DMO	:	DMO, Pakur vide memo no. 485/M, dated 09.04.2024 certified that 05 other mining lease area (6.00 Acre, 6.00 Acre, 5.41 Acre, 6.57 Acre & 6.41 Acre) exists within 500 m radius from proposed project site and total area is 36.17 Acre or 14.64 Ha.

4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1454, dated 01.07.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide memo no. 1553, dated 16.12.2023 certified that the distance of reserved / protected forest land is 1342 meter from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 486/M, dated 09.04.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 299, Page no. 132).
7	Gram Sabha	:	BDO, Maheshpur vide letter no. 2386/Vi., dated 04.12.2023 informed that Gram Sabha conducted on 29.11.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 966/M, dated 02.07.2024.
9	Qualified Person	:	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

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

Production Details

Year	Generation of Waste/O. B in cum	Production of Stone in Cum	Production of Stone in Tonnes	Grade/Uses
1st	29425	39672	107114	Construction & Road
2nd	17840	39920	107784	Construction & Road
3rd	00	40238	108643	Construction & Road
4th	00	40347	108937	Construction & Road
5th	00	40212	108572	Construction & Road

Total	47265	2,00,389	5,41,050	
Stripping Ratio in (m3/t)- 1:0.07				

Land Use Pattern

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

ENVIRONMENT MANAGEMENT

Green Belt Development

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

- Gabion Plantation work in the safety zone (7.5 m width around the proposed lease boundary)








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

Environment Management Budget

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

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

S. no	Monitoring Parameters	No. of Locations	Frequency of Monitoring
1	Ambient Air: Ambient Air Quality at appropriate location for PM10, PM2.5, SO2, NOx In the vicinity of	2 Stations	Six Monthly

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	the mine area. In the surrounding area covering project site only.		
2	Water: Surface water sample in the vicinity of the Project area.	2 Surface water 2 Ground water	Six Monthly
3	Noise: Day & Night level Noise Monitoring.	4 stations	Six Monthly
4	Soil: Soil Monitoring, Qualitative and quantitative testing/analysis to check the soil fertility, porosity, texture, water holding capacity, etc.	2 station	Six Monthly

Undertaking submitted affirming:

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

Solid Waste Management

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

Water Quality Management

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

Air Quality Management

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

Mitigation measures:

i. Use of Sharp Drill Bits

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

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

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

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

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

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

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

RISK ASSESSMENT

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

Hazard identification & Risk Analysis in Stone Mining operation

S.No.	Activity	Hazard	Probability	Severity	Score*
1	Temporary Storage of Explosives	Unintended Explosion	Very Unlikely	Catastrophic	5

2	Charging of Explosives	Unwanted Explosion	Very Unlikely	Catastrophic	5
3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

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

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

Preventive Measures:

Slope Failure

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

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

Drilling Operations

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

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

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them. While others may need to work at or near the edge of a working bench the person most at

risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

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

Dust generation during drilling

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

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

Noise Generation during drilling

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

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

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

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

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

Handling of Explosives

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

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

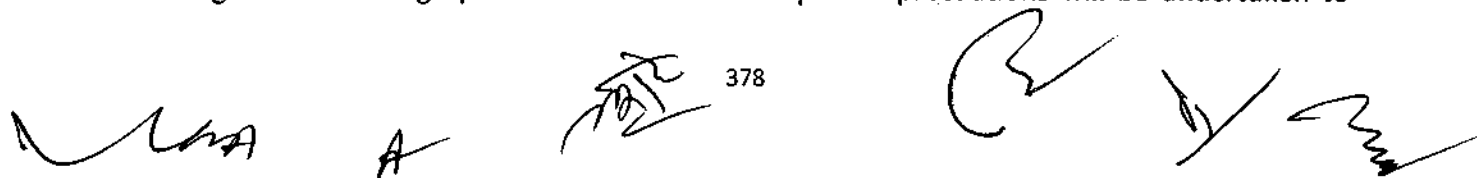
The storage of the explosives and its transfer to and from the quarry area shall be strictly in accordance with the conditions listed in the permission granted by Explosives Department. Few conditions are listed below:

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

Health Hazards

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

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

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

Accident at Site

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

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

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

Transportation

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

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

✓ Only trained drivers will be hired.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 23, 24, 25, 26 & 27.07.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III along with following specific condition :

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

16. Tangidaha Stone Mine of Shri Gol Mohammad Shekh, Village : Tangidaha, Thana no. : 08, Distt.: Pakur, Jharkhand (2.809 Ha).

(Proposal no.: SIA/JH/MIN/488959/2024)

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

This is a new project which has been listed for appraisal on 25.07.2024. But in absence of proper certificate of DMO, Pakur it could not be appraised on same day.

The PAs has provided proper certificate of DMO, Pakur and requested vide letter dated 27.07.2024 for the appraisal of the project.

Accordingly, the project was taken up for appraisal on 27.07.2024.

Project Category : B1 – 1(a) Mining of Minerals : Application for Terms of Reference (ToR) as per EIA notification, 2006.

ToR Application for: Proposed Capacity: 58,204 Cum Per Annum/194.01 Cum Per Day or 1,57,151 Ton Per Annum/523.83 Ton per Day

Project and Location Details:

S. No	Parameter		Details
1	Project Name	:	Tangidaha Stone Mine
2	Proprietor	:	Shri Gol Mohammad Shekh

3	Lessee Address	:	R/O- Kismat Kadmsar, Post- Jhikarhati, District- Pakur, Jharkhand	
4	Lease Area	:	Ha: 2.809 Ha	Acres: 6.94 Acres
5	Type of Land	:	Raiyati Land	
6	Project Cost	:	60 Lakhs	
7	EMP Budget	:	Capital: 22.90 Lakhs	Recurring: 7.69 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	583483 Cum	15,75,404 Tones
10	Mine Life	:	10 Years	
11	Mining Depth	:	24 m	
11	Man power	:	24 persons	
12	Water Requirement	:	Total water requirement is about 7.69 KLD= 0.69 (Drinking Water & Domestic Uses) + 3 KLD (Water sprinkling) + 4 KLD (plantation).	
13	Water Source	:	by Authorised hired water tankers	
14	DG Set / power	:	125 KVA (Temporary setup for Backup)	
15	Crusher	:	No	
16	Nearest Water Body	:	Kalupara Pond is about 0.58 km in ENE direction.	
17	Nearest Habitation	:	Village Tangidaha is about 0.39 km in WSW direction	
18	Nearest Rail Station	:	Nagarbani Railway Station is about 14.5 Km in W direction.	
19	Nearest Airport	:	Deoghar Airport is about 104.7 Km in W direction.	
20	Nearest Forest	:	Ganropahari P.F. is about 7.85 km in NW direction.	
21	Road & Highways	:	Nearest MDR is 1 KM away from the mine site in W direction.	

CO-ORDINATES

S.No.	Latitude	Longitude	S. No.	Latitude	Longitude
1	24° 33' 35.704" N	87° 43' 36.744" E	13	24° 33' 31.557" N	87° 43' 41.640" E
2	24° 33' 35.529" N	87° 43' 38.079" E	14	24° 33' 30.872" N	87° 43' 41.352" E
3	24° 33' 35.268" N	87° 43' 40.062" E	15	24° 33' 31.249" N	87° 43' 39.118" E
4	24° 33' 35.022" N	87° 43' 41.955" E	16	24° 33' 30.605" N	87° 43' 37.768" E
5	24° 33' 34.856" N	87° 43' 43.195" E	17	24° 33' 31.153" N	87° 43' 36.274" E
6	24° 33' 34.709" N	87° 43' 43.648" E	18	24° 33' 31.400" N	87° 43' 36.287" E
7	24° 33' 34.298" N	87° 43' 44.186" E	19	24° 33' 31.653" N	87° 43' 35.472" E
8	24° 33' 33.463" N	87° 43' 43.968" E	20	24° 33' 32.071" N	87° 43' 35.506" E
9	24° 33' 32.469" N	87° 43' 43.752" E	21	24° 33' 32.804" N	87° 43' 34.780" E
10	24° 33' 32.071" N	87° 43' 43.024" E	22	24° 33' 34.079" N	87° 43' 34.342" E
11	24° 33' 31.879" N	87° 43' 42.147" E	23	24° 33' 34.523" N	87° 43' 34.986" E
12	24° 33' 31.900" N	87° 43' 41.605" E	24	24° 33' 35.074" N	87° 43' 36.085" E

LAND DETAILS

Khata no.	Plot no.
03	79 (P)

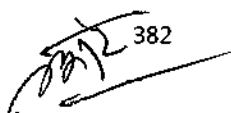
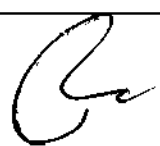
STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 937/M, dated 27.06.2024.
2	CO	:	The CO, Maheshpur vide letter no. 1196/Ra, dated 14.12.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyani & Register II.
3	DMO	:	DMO, Pakur vide memo no. 1103/M, dated 19.07.2024 certified that 08 other mining lease area (5.78 Acre, 6.00 Acre, 6.00 Acre, 6.919 Acre, 6.57 Acre, 6.41 Acre, 7.09 Acre & 6.58 Acre) exists within 500 m radius from proposed project site and total area is 58.289 Acre or 23.59 Ha.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 107, dated 18.01.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide memo no. 1554, dated 16.12.2023 certified that the distance of reserved / protected forest land is 1367 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 299, Page no. 132).
7	Gram Sabha	:	BDO, Maheshpur vide letter no. 2385/Vi., dated 04.12.2023 informed that Gram Sabha conducted on 30.11.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 1104/M, dated 19.07.2024.
9	Qualified Person	:	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	OCM & Mechanised	
2	Lease Area	:	6.94 ACRES / 2.809 HA	Life of Mine – 07 years
3	Waste Generation	:	5 Years- 59990 CUM	
4	Stripping Ratio(t/m ³)	:	1:0.04	
5	Working Days	:	300	
6	Bench: size & No	:	6m x 6m	
7	Highest Elevation of lease Area	:	101 m Above MSL	
8	Lowest Elevation of lease Area	:	97 m Above MSL	
9	Ultimate Working Depth	:	73 Above MSL	
10	Water Table	:	57 Above MSL	




11	Topography of Mine	:	Uneven Land
12	Explosive Requirement	:	Tentative 104.78 Kg/ Day
13	Diesel/Fuel requirement	:	568 Litres per day

Production Details

Year	Generation of Waste/O. B in cum	Production of Stone in Cum	Production of Stone in Tonnes	Grade/Uses
1st	36904	57226	154510	Construction & Road
2nd	23086	57825	156128	Construction & Road
3rd	00	58068	156784	Construction & Road
4th	00	58080	156516	Construction & Road
5th	00	58204	157151	Construction & Road
Total	59990	289403	781388	
Stripping Ratio in (m³/t)- 1:0.04				

Land Use

LAND USE PATTERN			
	Existing	First to Fifth Years	After Life of Mine
Category	Area in Hectares	Area in Hectares	Area in Hectares
Quarry	0.00	1.60	2.309 ha area will be converted as water reservoir 583483cum
Haul Road	0.00	0.03	0.00
Proposed Crusher	0.00	0.00	Crusher not proposed
Green belt in Safety Zone	0.00	0.50	0.50
Dump with Parapet wall & Garland drain	0.00	0.19	Top soil will be used for plantation and rest overburden shall use for haul road dressing and backfilling
Total area in use	0.00	2.32	2.809
Balance unused area	2.87	0.489	0
Balance used area	0.00	0.00	0
Total Applied Lease Area	2.809	2.809	2.809

ENVIRONMENT MANAGEMENT

Green Belt Development

S.No.	Location		Area/Length	No of Trees
1	Safety Zone	:	0.50 Ha	800 trees @ 1600 trees per ha
2	Other Reclaimed Area	:	NIL	NIL
3	Haul /Approach Road	:	500 m	Road length-500 m Two Row Planation= 500

			m/3.0m x 3.0 m Spacing = 166.6 say 166 Plant one side in one row 166 x 2 x 2 = 664 Plants
Total			1464

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

Environment Management Budget

S.NO.	Particulars	Budget Provisions (Rs)	
		Capital	Recurring
Water Demand			
1(a)	Fixed Overhead water sprinkling system with solar pump for outgoing and incoming transportation vehicles for haul road and green belt Cost for 300 days for 7 KLD @5 KL tanker capacity, Rupees 500/- per tanker	1,00,000	2,10,000
	& One dedicated tanker of 5 KL for Greenbelt Management	10,00,000	50,000
1(b)	Cost of Water tanker (3000 -liter capacity) Cost for (drinking and domestic use) 300 days for 0.69 KLD @ 3 KL tanker capacity, Rupees 600/- per tanker	0	41,400
1(c)	Discharge of waste water 300 days for 0.55 KLD @5 KL tanker capacity, Rupees 2000/per tanker	0	66,000
2	Prepare & Maintenance of approach road (Max. Road length 440 m, Width 4.0 m) @ 500Rs. /Meter.	2,20,000	22,000
3	Monitoring (Air, Water, Soil & Noise)	Nil	1,00,000
4	Settling tank 2 in no's (LBH 12 m* 7 m* 4 m) & Garland drains	2,00,000	30,000
5	Wire Fence 708 m x 300 /- meter	2,12,400	21,240
Plantation Scheme			
Plantation in consultation with DFO & Gram Panchayat and conversion to Grazing land as far as possible.			
6	Green belt development safety zone 7.5mtr and along the road (for each plants including hedges and fences) 1464 No. of plants x 500 Rs.	7,32,000	2,00,000
Solid Waste Management			
7	Bins 2 Nos.	1,500	4,000
8	Transport of Dry Waste	5,000	
9	Vehicle Maintenance +PUC Certification	Nil	25,000

Total EMP Budget	22,90,900	7,69,640

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

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

Undertaking submitted affirming:

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

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

Solid Waste Management

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

Water Quality Management

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

Air Quality Management

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

Mitigation measures:

i. Use of Sharp Drill Bits

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

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

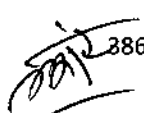
- Controlled blasting would be practiced.
- Optimum quantity of explosives would be used.
- Blasting to be done during favourable weather conditions.

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

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

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

- ✓ Regular water sprinkling on Haul road by using water Tankers.
- ✓ Regular repair of Haul road.



- ✓ All Trucks carrying stone outside lease area will have PUC certificate

RISK ASSESSMENT

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

Hazard identification & Risk Analysis in Stone Mining operation

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

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

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

Preventive Measures:

Slope Failure

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

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

Drilling Operations

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

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

Falls from the edge of a bench

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

Control Measures

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

Dust generation during drilling

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

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

Noise Generation during drilling

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

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

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

Blasting Operations

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

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

Handling of Explosives

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

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

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

Few conditions are listed below:

- ✓ Proper and safe storage of explosives in approved and Licensed Magazine.
- ✓ Proper security system to prevent theft/ pilferage, unauthorized entry into Magazine area and checking authorized persons to prevent carrying of match box, lights, mobile phones, cigarette or Bidi etc. will be put in place.
- ✓ Explosives shall be conveyed in special containers.
- ✓ Explosives and detonators shall not be carried in the same container.

The bottom of the page features several handwritten signatures and marks. From left to right, there is a signature that appears to be 'LMA', a single letter 'A', a signature that looks like 'SAR', a large stylized signature 'C', a signature 'D', and a final signature that is partially cut off on the right edge.

- ✓ The holes which have been charged with explosives will not be left unattended till blasting is completed.

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

- ✓ Mine road shall be made smooth regularly with a road roller.
- ✓ Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- ✓ Mine road will be made sufficiently wide to keep two-way traffic.
- ✓ Mine roads will be designed as per the specifications given under MMR 1961.
- ✓ Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- ✓ All transportation within the mine lease area should be carried out directly under the supervision and control of management.

The bottom of the page features several handwritten signatures and initials in black ink. From left to right, there is a large, stylized signature, a smaller signature, a signature with a horizontal line underneath, a signature with a large loop, a signature with a diagonal slash, and a final signature on the far right.

- ✓ The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- ✓ Navigation signs will be provided at each and every turning point up to the main road (wherever required).
- ✓ To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- ✓ Only trained drivers will be hired.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 23, 24, 25, 26 & 27.07.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III along with following specific condition :

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

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

(Proposal no.: SIA/JH/MIN/486187/2024)

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

This is a new project which has been taken for appraisal on 25.07.2024.

Project Category : B1 – 1(a) Mining of Minerals : Application for Terms of Reference (ToR) as per EIA notification, 2006.

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

Project and Location Details:

S. No	Parameter		Details
1	Project Name	:	Asanjola Stone Mine
2	Lessee	:	M/s Roy And Roy Mining Pvt. Ltd., Director- Shri Anil Kumar

3	Lessee Address	:	R/o- H. No.-02, Mehus, District- Shekhpura, Bihar	
4	Lease Area	:	Ha: 2.83 Ha	Acres: 7.0 Acres
5	Type of Land	:	Raiyati Land	
6	Project Cost	:	57 Lakhs	
7	EMP Budget	:	Capital: 19.92 Lakhs	Recurring: 5.99 Lakhs / year
8	New or Expansion	:	New	
9	Mineable Reserves	:	4,83,020 Cum	13,52,456 Tones
10	Mine Life	:	07 Years	
11	Mining Depth	:	22 m	
11	Man power	:	24 persons	
12	Water Requirement	:	Total water requirement is about 7.69 KLD= 0.69 (Drinking Water & Domestic Uses) + 3 KLD (Water sprinkling) + 4 KLD (plantation).	
13	Water Source	:	by Authorised hired water tankers	
14	DG Set / power	:	125 KVA (Temporary setup for Backup)	
15	Crusher	:	No	
16	Nearest Water Body	:	Torai Nadi is about 7.8 km in NNE direction.	
17	Nearest Habitation	:	Village Asanjola is about 0.37 km in N direction	
18	Nearest Rail Station	:	Pakur Railway Station is about 14.9 Km in ENE direction.	
19	Nearest Airport	:	Deoghar Airport is about 103 Km in W direction.	
20	Nearest Forest	:	Dhangara Pahad P.F. is about 5 km in ENE direction.	
21	Road & Highways	:	NH-133A is about 7.4 km in NE direction.	

CO-ORDINATES

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

LAND DETAILS

Khata no.	Plot no.
04	575
05	574

07	577 (P)
12	576
18	573

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 356/M, dated 15.03.2024.
2	CO	:	The CO, Hiranpur vide letter no. 24/Ra., dated 18.01.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyani & Register II and also mentioned that the habitation of 15 house at a distance of 400 meters of proposed project site.
3	DMO	:	DMO, Pakur vide memo no. 441/M, dated 01.04.2024 certified that 02 other mining lease area (5.20 Acre & 7.09 Acre) exists within 500 m radius from proposed project site and total area is 19.29 Acre (7.81 Ha).
4	DFO Wild Life	:	DFO -cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 279, dated 06.02.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide letter no. 133, dated 25.01.2024 certified that the distance of reserved / protected forest is more than 250 meters from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 483/M, dated 09.04.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 114, Page no. 119).
7	Gram Sabha	:	BDO, Hiranpur vide letter no. 81/Vi., dated 25.01.2024 informed that Gram Sabha conducted on 24.01.2024.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 957/M, dated 01.07.2024.
9	Qualified Person	:	Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	OCM & Mechanised
2	Lease Area	:	7.81 ACRES / 2.83 HA
			Life of Mine – 07 years

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

Production Details

Year	Generation of Waste/O. B in cum	Production of Stone in Cum	Production of Stone in Tonnes	Grade/Uses
1st	37884	65566	183585	Construction & Road
2nd	00	68670	192276	Construction & Road
3rd	25182	69299	194037	Construction & Road
4th	00	68992	193178	Construction & Road
5th	00	69015	193242	Construction & Road
Total	63066	3,41,472	9,56,318	
Stripping Ration in (m3/t)- 1:0.06				

Land Use

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

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Place of Plantation	Spacing b/w plants	Total No. of Plants	Area Cover in Square Meters	Total Area in Ha.	Species
1st	Safety Zone	2.5 x 2.5	768	4800	0.48	Gulmohar, Gular, Shami, Sagwan, Sakua
	Haul Road	2.5 x 2.5	160	100Meter Two row plantation in Both Side 40*4= 160		
2nd	Care & Protection	---	---	---	---	
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			928	4800	0.48	

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

Environment Management Budget

S .NO.	Particulars	Budget Provisions (Rs)	
		Capital	Recurring
Water Demand			
1(a)	Fixed Overhead water sprinkling system with solar pump for outgoing and incoming transportation vehicles for haul road and greenbelt. Cost for 300 days for 7 KLD @5 KL tanker capacity, Rupees 500/- per tanker	1,00,000	2,10,000
	& One dedicated tanker of 5 KL for Greenbelt Management	10,00,000	50,000
1(b)	Discharge of hired wastewater tanker 300 days for 0.55 KLD @5 KL tanker capacity, Rupees 2000/per tanker	0	66,000
2	Prepare & Maintenance of approach road (Max. Road length 100 m, Width 4.0 m) @ 500Rs. /Meter.	50,000	5,000

3	Monitoring (Air, Water, Soil & Noise)	Nil	1,00,000
4	Settling tank 2 in no's (LBH 12 m* 7 m* 4 m) & Garland drains	2,00,000	30,000
5	Wire Fence 644 m (perimeter) x 300 /- meter	1,93,200	19,320
Plantation Scheme			
Plantation in consultation with DFO & Gram Panchayat			
6	Green belt development safety zone 7.5mtr and along the road (for each plants including hedges and fences and tree guard at approach roads) 896 No. of plants x 500 Rs.	4,48,000	1,00,000
Solid Waste Management			
7	Bins 2 Nos.	1,500	4,000
8	Transport of Waste for disposal		
9	Vehicle Maintenance +PUC Certification	Nil	15,000
Total Cost		19,92,700	5,99,320

Environment Monitoring Plan (post operation)

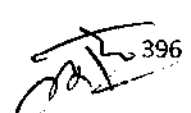
Monitoring Parameters and Frequency of Monitoring

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

Undertaking submitted affirming:

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







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

Solid Waste Management

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

Water Quality Management

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

Air Quality Management

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

Mitigation measures:

i. Use of Sharp Drill Bits

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

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

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

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

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

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

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

RISK ASSESSMENT

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

Hazard identification & Risk Analysis in Stone Mining operation

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



7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

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

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

Preventive Measures:

Slope Failure

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

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

Drilling Operations

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

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

Falls from the edge of a bench

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

Control Measures

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

- ✓ Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- ✓ Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

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

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

Noise Generation during drilling

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

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

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

Blasting Operations

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

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

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

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

Handling of Explosives

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

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

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

Few conditions are listed below:

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

Health Hazards

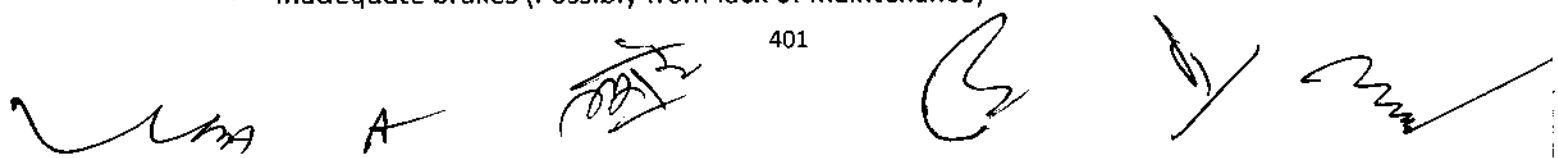
Health hazards should be interpreted as being harmful dust and noise which is emitted during surface mining operations. All suitable steps and precautions will be undertaken to ensure minimum health hazard. Provision of use of Personal Protective Equipment (PPE) will be kept.

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

Accident at Site

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

- ✓ Rough access roads
- ✓ Time pressure
- ✓ Inadequate brakes (Possibly from lack of maintenance)

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- ✓ Carelessly parked vehicles (e.g. being parked on a slope without being adequately secured)
- ✓ Untrained drivers
- ✓ Overturning vehicles

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

Transportation

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

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

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 23, 24, 25, 26 & 27.07.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith the following specific condition :

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



- ii. The detailed EMP is to be prepared for the Habitation existing within an area of 500 meter radius of proposed project boundary. This EMP is to be included in EIA report.

18. Manjhladih Stone Mine of M/s Samid Stone Works (Prop. : Shri Samid Ansari), Village : Manjhladih, Thana no. : 60, Thana : Hiranpur, Distt.: Pakur, Jharkhand (2.696 Ha).

(Proposal no.: SIA/JH/MIN/486798/2024)

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

This is a new project which has been taken for appraisal on 25.07.2024.

Project Category : B1 – 1(a) Mining of Minerals : Application for Terms of Reference (ToR) as per EIA notification, 2006.

ToR Application for: 40,710 Cum Per Annum/1,09,917 Ton Per Annum

Project and Location Details:

S. No	Parameter	Details
1	Project Name	: Manjhladih Stone Mine (M/s Samid Stone Works)
2	Proprietor	: Mr. Samid Ansari
3	Lessee Address	: R/o- Gram- Rampur, P.O.-Pakur, Thana- Pakur, District- Pakur-816107
4	Lease Area	: 2.696 Ha 6.66 Acres
5	Type of Land	: Raiyati Land
6	Project Cost	: 49 Lakhs
7	EMP Budget	: Capital: 22.83 Lakhs Recurring: 6.52 Lakhs / year
8	New or Expansion	: New
9	Mineable Reserves	: 4,01,288 Cum 10,83,477 Tonnes
10	Mine Life	: 10.0 Years
11	Man power	: 20 persons
12	Water Requirement	: Total water requirement is about 7.6 KLD= 0.60 (Drinking Water & Domestic Uses) + 3 KLD (Water sprinkling) + 4 KLD (plantation).
13	Water Source	: by Authorised hired water tankers
14	DG Set / power	: 125 KVA (Temporary setup for Backup)
15	Crusher	: No
16	Nearest Water Body	: Torai Nadi is about 5.2 km in SW direction.
17	Nearest Habitation	: Village Manjhladih is about 0.59 km in NE direction

18	Nearest Rail Station	:	Kotal Pakur Railway Station is about 7.02 Km in ENE direction.
19	Nearest Airport	:	Deoghar Airport is about 111 Km in WSW direction.
20	Nearest Forest	:	Belpahadi P.F. is about 2.91 km in SW direction.
21	Road & Highways	:	NH-133A is about 4.7 km in W direction. NH-333A is about 9.7 km in WSW direction.

CO-ORDINATES

S. No.	Latitude	Longitude	S. No.	Latitude	Longitude
1	24° 43' 34.604" N	87° 45' 18.654" E	19	24° 43' 29.979" N	87° 45' 24.781" E
2	24° 43' 33.989" N	87° 45' 20.431" E	20	24° 43' 30.073" N	87° 45' 23.293" E
3	24° 43' 33.371" N	87° 45' 22.211" E	21	24° 43' 29.251" N	87° 45' 23.280" E
4	24° 43' 33.119" N	87° 45' 22.273" E	22	24° 43' 28.914" N	87° 45' 24.501" E
5	24° 43' 32.799" N	87° 45' 22.828" E	23	24° 43' 28.362" N	87° 45' 24.452" E
6	24° 43' 32.652" N	87° 45' 23.265" E	24	24° 43' 28.506" N	87° 45' 23.145" E
7	24° 43' 32.849" N	87° 45' 23.574" E	25	24° 43' 28.566" N	87° 45' 21.768" E
8	24° 43' 32.198" N	87° 45' 24.417" E	26	24° 43' 28.638" N	87° 45' 19.893" E
9	24° 43' 31.804" N	87° 45' 24.858" E	27	24° 43' 28.712" N	87° 45' 19.095" E
10	24° 43' 31.855" N	87° 45' 25.192" E	28	24° 43' 28.760" N	87° 45' 18.661" E
11	24° 43' 31.469" N	87° 45' 26.146" E	29	24° 43' 28.823" N	87° 45' 18.100" E
12	24° 43' 31.365" N	87° 45' 26.518" E	30	24° 43' 29.528" N	87° 45' 18.183" E
13	24° 43' 31.144" N	87° 45' 26.875" E	31	24° 43' 30.570" N	87° 45' 18.382" E
14	24° 43' 30.956" N	87° 45' 27.120" E	32	24° 43' 32.163" N	87° 45' 18.716" E
15	24° 43' 30.442" N	87° 45' 27.120" E	33	24° 43' 32.292" N	87° 45' 18.511" E
16	24° 43' 30.518" N	87° 45' 26.474" E	34	24° 43' 33.859" N	87° 45' 18.845" E
17	24° 43' 30.330" N	87° 45' 26.004" E	35	24° 43' 33.962" N	87° 45' 18.562" E
18	24° 43' 30.339" N	87° 45' 25.628" E			

LAND DETAILS

Khata no.	Plot no.	Khata no.	Plot no.
04	542, 553	10	549
05	543	09	550, 551
29	545 (P)	46	552 (P)
20	546	41	554, 555 (P)
16	547 (P)	38	556, 561

STATUTORY CLEARANCES

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

		Officer, Pakur vide memo no. 388/M, dated 19.03.2024.
2	CO	: The CO, Hiranpur vide letter no. 474/Ra, dated 12.09.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyani & Register II.
3	DMO	: DMO, Pakur vide memo no. 470/M, dated 08.04.2024 certified that 02 other mining lease area (13.49 Acre & 6.66 Acre) exists within 500 m radius from proposed project site and total area is 26.96 Acre or 10.91 Ha.
4	DFO Wild Life	: DFO -cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 1895, dated 29.09.2023 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	: Division Forest Officer, Pakur Forest Division vide memo no. 1253, dated 29.09.2023 certified that the distance of reserved / protected forest land is more than 250 meter from proposed project site.
6	DSR	: The DMO, Pakur has been certified vide memo no. 487/M, dated 09.04.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 18, Page no. 118).
7	Gram Sabha	: Gram Sabha conducted on 18.09.2023.
8	Mine Plan Approval	: Approved by District Mining Officer, Pakur vide Memo No. 938/M, dated 27.06.2024.
9	Qualified Person	: Md. Tauseef Warsi was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	OCM & Mechanised	
2	Lease Area	:	6.66 ACRES / 2.696 HA	Life of Mine – 10.0 years
3	Waste Generation	:	5 years– 28307 CUM	
4	Stripping Ratio(t/m ³)	:	1:0.08	
5	Working Days	:	300	
6	Bench: size & No	:	6m x 6m	
7	Highest Elevation of lease Area	:	44 Amsl	
8	Lowest Elevation of lease Area	:	42 Amsl	
9	Ultimate Working Depth	:	18 Amsl (24m)	
10	Water Table	:	7 Amsl	

11	Topography of Mine	:	Uneven Land
12	Explosive Requirement	:	Tentative 73.14 kg/day
13	Diesel/Fuel requirement		536 Litres per day

Production Details

Year	Generation of Waste/O. B in cum	Production of Stone in Cum	Production of Stone in Tonnes	Grade/Uses
1st	11974	36573	98747	Construction & Road
2nd	8553	38979	105243	Construction & Road
3rd	00	40710	109917	Construction & Road
4th	00	39930	107811	Construction & Road
5th	7780	39798	107455	Construction & Road
Total	28307	195990	529173	
Stripping Ratio in (m3/t)- 1:0.08				

Land Use

LAND USE PATTERN			
	Existing	First to Fifth Years	After Life of Mine
Category	Area in Hectares	Area in Hectares	Area in Hectares
Quarry	0.00	1.1	2.086 ha area will be convert as water reservoir 401288cum
Haul Road	0.00	0.08	0.00
Proposed Crusher	0.00	0.00	0.00
Green belt in Safety Zone	0.00	0.61	0.61
Dump with Parapet wall & Garland drain	0.00	0.25	Top soil used for plantation and backfilling
Total area in use	0.00	2.04	2.696
Balance unused area	2.696	0.656	0.00
Balance used area	0.00	0.00	0.00
Total Applied Lease Area	2.696	2.696	2.696

ENVIRONMENT MANAGEMENT

Green Belt Development

Year	Place of Plantation	Spacing b/w plants	Total No. of Plants	Area Cover in Square Meters	Total Area in Ha.	Species
1st	Safety Zone	2.5 x 2.5	976	6100	0.61	Gulmohar, Gular, Shami, Sagwan, Sakua Fruit
	Approach Road	3.0 x 3.0	266	200 Meter 266 plants two row plantation	--	

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2nd	Care & Protection	---	---	---	---	Bearing Trees E.g- Mango, Jackfruit
3rd	Care & Protection	---	---	---	---	
4th	Care & Protection	---	---	---	---	
5th	Care & Protection	---	---	---	---	
Total			1242	6100	0.61	

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

Environment Management Budget

S .NO.	Particulars	Budget Provisions (Rs)	
		Capital	Recurring
Water Demand			
1(a)	Fixed Overhead water sprinkling system with solar pump for outgoing and incoming transportation vehicles for haul road and greenbelt. Cost for 300 days for 7 KLD @5 KL tanker capacity, Rupees 500/- per tanker	1,00,000	2,10,000
	& One dedicated tanker of 5 KL for Greenbelt Management	10,00,000	-
1(b)	Discharge of hired wastewater tanker 300 days for 0.48 KLD @5 KL tanker capacity, Rupees 2000/per tanker	0	57,600
2	Prepare & Maintenance of approach road (Max. Road length 200 m, Width 4.0 m) @ 500Rs. /Meter.	1,00,000	10,000
3	Monitoring (Air, Water, Soil & Noise)	Nil	1,00,000
4	Settling tank 2 in no's (LBH 12 m* 7 m* 4 m) & Garland drains	2,00,000	30,000
5	Wire Fence 850 m (perimeter) x 300 /- meter	2,55,000	25,500
Plantation Scheme			
Plantation in consultation with DFO & Gram Panchayat			
6	Green belt development safety zone 7.5mtr and along the road (for each plants including hedges and fences and tree guard at approach	6,22,000	2,00,000

	roads)		
	1244 No. of plants x 500 Rs.		
Solid Waste Management			
7	Bins 2 Nos.	1,500	4,000
8	Transport of Waste for disposal	5,000	
9	Vehicle Maintenance +PUC Certification	Nil	15,000
Total EMP Cost		22,83,500	6.52,100

Environment Monitoring Plan (post operation)

Monitoring Parameters and Frequency of Monitoring

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

Undertaking submitted affirming:

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

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

Solid Waste Management

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

Water Quality Management

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

Air Quality Management

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

Mitigation measures:

i. Use of Sharp Drill Bits

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

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

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

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

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

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

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

RISK ASSESSMENT

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

Hazard identification & Risk Analysis in Stone Mining operation

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

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

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

Preventive Measures:

Slope Failure

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

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

- ✓ No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

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

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

Falls from the edge of a bench

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

Control Measures

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

Dust generation during drilling

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

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

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Noise Generation during drilling

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

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

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

Blasting Operations

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

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

Handling of Explosives

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

- ✓ Use of explosives is specialist work. Planning for a round of shots is necessary to ensure that the face is properly surveyed, holes correctly drilled, direction logged, the weight of

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explosive suitable for good fragmentation and the continuity of the initiator are but a few of the steps necessary to ensure its safe use.

- ✓ Poorly designed shots can result in misfires, early ignition and flying rock.

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

Few conditions are listed below:

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

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

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

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 23, 24, 25, 26 & 27.07.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith the following specific condition :

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

A. Deputy Commissioner –cum- District Magistrate, Deoghar or through authorized representative.

i. Final District Survey Report (DSR) for Minor Minerals other than Sand Mining or River Bed Mining (Stone), Distt. Deoghar.

This DSR was listed in meeting no. 111 which was deferred on the request of DMO, Deoghar.

This has been listed for consideration for the 2nd time in this meeting. However, this could not be taken up for consideration as per the request of DMO, Deoghar for deferment of the consideration of DSR vide letter no. 641/M, dated 25.07.2024.

Hence, it is deferred and will be taken up for further consideration on the request of DMO, Deoghar.

B. District Magistrate –cum- Deputy Commissioner, Jamtara or through authorized representative.

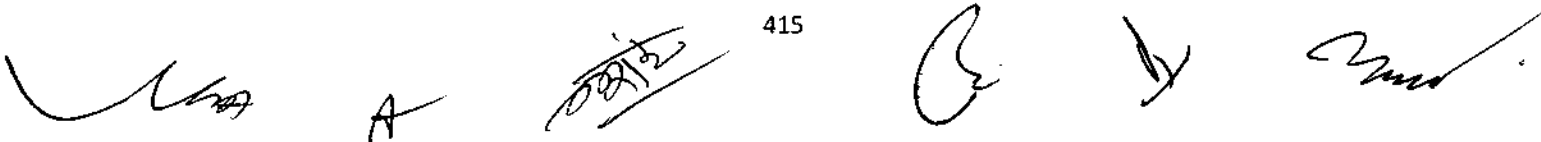
i. Final District Survey Report (DSR) for Minor Minerals other than Sand Mining or River Bed Mining (Stone & Brick Earth), Distt. Jamtara.

The Final DSR was submitted by District Magistrate -Cum- Deputy Commissioner, Jamtara. He was represented by Shri Dilip Kumar, District Mining Officer, Jamtara during the SEAC meeting on 26.07.2024.

During the meeting the DMO, Jamtara presented the DSR before the Committee. The DSR was appraised in light of S.O. no. 3611 (E), dated 25.07.2018 of MoEF&CC, Govt. of India.

The DSR has not been prepared as per the format provided in the above notification. Hence, DSR is to be resubmitted after suitable amendments to meet all the requirements of S.O. no. 3611 (E), dated 25.07.2018 of MoEF&CC, Govt. of India.

Hence, it is deferred and will be taken up for further consideration after the revised DSR is submitted.

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C. Deputy Commissioner –cum- District Magistrate, Ranchi or through authorized representative.

- i. **Final District Survey Report (DSR) for Minor Minerals other than Sand Mining or River Bed Mining (Stone & Earth Work), Distt. Ranchi.**

The Final DSR was submitted by Deputy Commissioner -Cum-District Magistrate, Ranchi. He was represented by Md. Abu Hussain, District Mining Officer, Ranchi during the SEAC meeting on 26.07.2024.

During the meeting the DMO, Ranchi presented the DSR before the Committee. The DSR was appraised in light of S.O. no. 3611 (E), dated 25.07.2018 of MoEF&CC, Govt. of India.

The DSR has not been prepared as per the format provided in the above notification. Hence, DSR is to be resubmitted after suitable amendments to meet all the requirements of S.O. no. 3611 (E), dated 25.07.2018 of MoEF&CC, Govt. of India.

Hence, it is deferred and will be taken up for further consideration after the revised DSR is submitted.

D. Consideration of Proposals

1. **Sanatan Sand Ghat of Jharkhand State Mineral Development Corporation Ltd. (JSMDCL), Village : Sanatan, Circle : Pathargama, Distt.: Godda, Jharkhand (3.98 Ha).**

(Proposal no.: SIA/JH /MIN/485688/2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 26.07.2024.

Project Category : B2 – 1(a) Mining of Minerals : Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 31,543 Cum. / annum or 54,884 TPA (dry basis).

Project and Location Details:

Sl. no.	Parameter	Details
1	Project Name	Sanatan Sand Ghat

2	Lessee:	M/s Jharkhand State Mineral Development Corporation Ltd. (A Government Of Jharkhand Undertaking)	
3	Lessee Address	Khanij Nigam Bhawan, Doranda, Ranchi – 834002 (Jharkhand)	
4	Lease Area	3.98 Ha.	Acres – 9.83 Acres
5	Type of Land	Non-Forest Government waste Land (River Bed)	
6	Project Cost	Capital Cost: Rs. 12.55 Lakhs	Recurring: 7.7 Lakhs / Year
7	EMP Budget	Capital: Rs 4.94 Lakhs	Recurring: 5.45 Lakhs / Year
8	New or Expansion	New	
9	Mineable Reserves for 1 st year & subsequent year 60% of Replenished quantity	31,543 m ³ (Round-off) (dry basis)	Tonnes: -54,884 Tonnes (Round-off) (dry basis)
10	Mine Life/ Lease Period	Lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy	
11	Man power	26	
12	Water Requirement	2.5 KLD (Drinking: 0.36 KLD, Dust Suppression: 1.232 KLD, Plantation: 0.909 KLD)	
13	Water Source	By authorised hired tankers	
14	DG Set / power	NA	
15	Crusher	NA	
16	Nearest Water Body	Chir River	
17	Nearest Habitation	Sanatan – 1 Km	
18	Nearest Rail Station	Godda Railway station is located at a distance of about 8.00 Km in S-E direction.	
19	Nearest Air Port	Deoghar Airport – 68.00 km in SW direction	
20	Nearest Forest	More than 250 m, as per Forest Division. Letter No. – 612 Dated - 19/04/2024	
21	Road & Highways	Village road - 0.308 Km in North direction NH-133A (Hansdiha-Mahagama road) – 9.00 Km in East direction	

CO-ORDINATES

GPS Coordinates		
Point	Latitude	Longitude
A	24° 54' 01.695" N	87°09' 14.217" E

B	24° 54' 03.008" N	87°09' 17.513" E
C	24° 53' 51.621" N	87°09' 24.264" E
D	24° 53' 50.239" N	87°09' 21.080" E

LAND DETAILS

Khata no.	Plot no.
75	184

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Auction letter has been issued by Joint Secretary, Mines & Geology Deptt., Govt. of Jharkhand vide letter no. Kha.ni.-(Vividh)-11//201/-2090/M, dated 30.09.2022. According to provisions in Jharkhand State sand Mining Policy and its amendment. JSMDCLtd. has been nominated as nodal agency for operating sand mines in category II.
2	CO	:	The CO, Pathargama vide letter no. 841/Ra., dated 28.12.2022 has mentioned the plot no. of the project is not recorded as "Jungel-Jhari" in R.S. Khatiyon & Register II.
3	DMO	:	DMO, Godda vide letter no. 700/M, dated 06.05.2024 certified that no other balughat exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Sahibganj Forest Division vide letter no. 1199, dated 19.06.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Godda Forest Division vide letter no. 612, dated 19.04.2024 certified that the distance of forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Godda District (Page No. - 83, Point No. - 14)
7	Gram Sabha	:	BDO, Pathargama vide memo no. 698/Vl., dated 11.05.2024 informed that Gram Sabha conducted on 11.05.2024.
8	Mine Plan Approval	:	Approved by Assistant Mining Officer, Godda vide Memo No. 701/M, dated 06.05.2024.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and

		affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	Opencast Manual Method	
2	Quarry Area	3.98 Ha.	Mine life/Lease Period - Lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining
3	Waste Generation	00 cum	
4	Stripping Ratio	NA	
5	Working Days	200 per year	
6	Grid excavation	25x 25 (meter) ²	
7	Elevation of Mine	3.27 m AMSL (Pre-Monsoon) & 3.67 m AMSL (Post-Monsoon)	
8	Ground Level Elevation	08 m AMSL	
9	Ultimate Working Depth	0.8 m	
10	Water Table	1.1 m AMSL	
11	Topography of Mine	Flat	
12	Explosive Requirement	No. blasting required	
13	Diesel/Fuel requirement	Not required for mining.	

Production Details

Year	Production of Sand (cum)	Production of Sand (tonnes)
1 st	31543	54884

The development plan submitted along with the mining plan relates to mining operation during the first year.

Land Use (Plan period)

Sl. No.	Pattern of Utilization	Land Use (in Ha.)	Remarks
1	Mining Activities	3.94	Area may vary based on flow of water

			in the subsequent year.
2	Loss due to safety zone	0.04	1. Distance from the bank should be $\frac{1}{4}$th of River width and should not be less than 7.5 meters. 2. Mining shall be restricted within the central $\frac{3}{4}$th width of the river/rivulet or 7.5 meters (inward) from River-bank but up to 10% of the width of the River. 3. Mining shall be restricted 60 % area for both side of river edge.
Total		3.98	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Along River Edge	298 m	99
2	Along Approach Road	308 m	204

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

Budget for Environmental Management

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. @ Rs. 1000 per Tanker	--	2,00,000
2	Plantation (@Rs.500 per plant) 175 X 1500 = 262500 (Includes Fertilizer, Pesticides, Maintenance)	262500	26250
3	Tarpaulin (To improve efficiency, reduce waste and minimize environmental impact)	40000	

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
4	Sand Replenishment Survey		200000
4	Environmental Monitoring (One Day Monitoring) - Ambient Air (8 Point) 24 hrs – Rs. 32000 - Water (2 Point)- Rs 8000 - Noise 24 hrs(5point) – Rs 10000 Total - Rs. 50000 (Per Season) Atleast two season in a Year - Rs. 50000 x 2 = Rs. 100000	--	100000
Total		302500	526250

Environment Monitoring Programme

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	8 stations	6 Monthly
2.	Surface Water	2 stations	6 Monthly
3.	Noise	5 stations	6 Monthly

Solid Waste Management

No solid waste is generated during the course of mining.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Sewage from rest shelter would be treated in Septic Tank soak pit.
- There is no other source for generation or discharge of trade effluent.

Air Quality Management

Sand will be mined manually. No mining equipment would be needed. However, diesel operated tippers/tractors would be used for transportation of sand from mine to stockyard.

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

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

Movement of tippers on Road – Movement of tippers on road generate dust. For mitigation of this pollution following measures will be taken

- Regular water sprinkling on Approach road by using water tankers.
- Regular repair of Approach road
- All Trucks carrying Sand outside lease area will have PUC certificate.
- Transport tippers/traders moving on public road will be covered with tarpaulin.

RISK ASSOCIATED WITH PROJECT ACTIVITIES AND THEIR MITIGATION MEASURES ARE DISCUSSED BELOW:

Road accidents

Transportation of sand along the public road may cause accident which may cause injury.

Preventive Measures;

- Ensure speed limit for the haulage vehicle for 40 KMPH.
- Regular maintenance of haulage road
- Appropriate navigational signs informing sensitive area like school and habitation
- Regular maintenance of the vehicles.

Dust generation

No drilling involved

- Dust mask would be supplied to workers.
- Regular sprinkling of water on road

Noise Generation

Source of noise pollution in the project would be movement of tippers / tractors transporting sand from mine to stock yard. In general tippers / tractors produce a noise level of 75 – 90 (A) measured at distance of 3m from the source.

Preventive measures

- Transportation activities would be confined during day time only.
- There would be a speed limit of 40 kmph for tippers. Higher is speed higher is noise.
- Regular repair and maintenance of tippers/tractors.
- Plantation on both sides of haulage road.
- Tippers having PUC certified will be allowed to be used for sand transportation.

Health Hazards

During digging and handling of sand i.e. loading, transportation and unloading of sand, workmen would be exposed to inhalation of fine dust particles. This poses a health hazard.

Preventive Measures

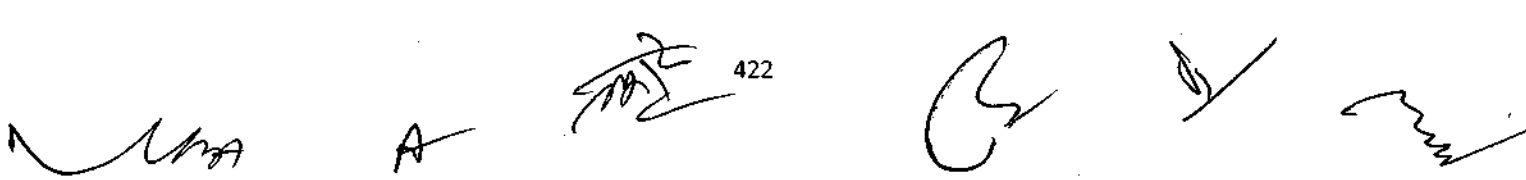
Following mitigation measures would be taken to minimize this impact on health

- Regular water sprinkling on haulage roads
- Tree plantation on both sides of haulage road
- Tippers / Tractors carrying sand would be covered
- Mask would be provided to workmen employed for digging, loading, transportation and unloading activities

Accident at Site

This is a project with only source of accident at site would be movement of tippers /tractors within mine site for transportation of sand.

Preventive measures



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Following mitigation measures would be taken to minimise risk of road accident-

- Separate alignment for movement of loaded vehicles coming out of mine site
- Ensure speed restriction of 10 KMPH within mine site for incoming and outgoing tippers
- Regular maintenance and repair of haulage vehicles employed for sand transportation
- No overtaking of transportation vehicles within mine site
- Proper maintenance of haulage roads

Transportation

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

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
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- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired

Undertaking submitted affirming:

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

- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
- k. Mining will be restricted upto 3 meter.

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Sanatan Sand Ghat of Jharkhand State Mineral Development Corporation Ltd. (JSMDC), Village : Sanatan, Circle : Pathargama, Distt.: Godda, Jharkhand (3.98 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II alongwith the following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- II. The Environmental Clearance granted for lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.
- III. Replenishment study shall be conducted during pre-monsoon and post monsoon every year and study report have to be submitted to SEIAA / SEAC, Jharkhand. The production shall be restricted to 60% of the replenished quantity or the proposed quantity in the mine plan, which ever is less.
- IV. Suitable plant species of not less than 2 M height to be planted in area equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- V. Dedicated water tanker to be provided for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- VI. Pre-employment Occupational health checkup for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests. Summary findings of same to submitted along with 6 monthly compliance.

- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted within 6 monthly compliance report with Geo-Tagged photographs.
- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted within 6 monthly compliance report.
- IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.
- X. Project Authority will ensure that personal protective equipments such as protective clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel's.
- XI. River Sand Mining shall not be done in rainy Season (mid June to mid October of each calendar year).
- XII. Dept. of Mines & Geology, Govt. of Jharkhand shall keep a strict vigil in the compliance of relevant provisions of applicable Jharkhand Minerals (Prevention of illegal mining, Transportation and Storage) Rule 2017 and its amendment especially scientific execution of mining plan (as approved by them themselves) and report violations if any is found as well as action taken for the same.
- XIII. Project Proponent shall submit (to the SEIAA, Jharkhand, Regional Office of MoEF&CC at Ranchi, Jharkhand State Pollution Control Board) six monthly compliance report with evidence of the conditions within a fortnight after the end of every six month till validity period of Environmental Clearance.
- XIV. The project proponent before starting any activity / preparation of ground, on the leased area shall demarcate his lease hold by RCC pillars erected at the cost of lease holder after certification of the mining officer. On each pillar Geo-Coordinate and fore bearing / back bearing shall be written with permanent paint mark as described in the mining plan. All the pillars should remain intact at same geo-coordinate. Establishment / labeling of Benchmark at each pillars or ground control points.
- XV. Extraction of sand beyond annual production capacity is not permitted.
- XVI. The Project Proponent should undertake the sand mining limited to 03 meter (three meter) depth by exclusively manual method.
- XVII. The stacking area of mined-out sand which shall be situated near the mining site within a fenced area from all sides to avoid being spread in the nearby areas by high winds and the height of stacking should not exceed 2 meter. Transportation shall be confined to day time only that is from sunrise to sunset, to avoid inconvenience to local population in any manner.
- XVIII. Mining activity shall not be done for mine lease where mining can cause danger to site of flood protection works, places of cultural, religious, historical and archaeological importance.
- XIX. Project Proponent shall submit the annual replenishment report certified by an authorized agency.
- XX. No labour camp shall be allowed in riverbed.
- XXI. Provision shall be made for housing labour with all necessary infrastructure and facilities (outside mining Block and river-bed) such as fuel for cooking, toilets / mobile

toilets, safe drinking water, First-Aid facilities, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

- XXII. Labour & Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers shall be undertaken periodically to observe any adverse health impact due to exposure to dust and take corrective measures, if needed.
- XXIII. The Project Proponent shall make arrangements for safe drinking water, first aid facility along with anti-venom injection, in case of emergency for the workers.
- XXIV. Sand and gravel may be extracted across the entire active channel during the dry season.
- XXV. Abandoned stream channels on the terrace and inactive floodplains be preferred rather than active channels and their deltas and flood plains. The stream should not be diverted to form the inactive channel.
- XXVI. Layers of sand and gravel which could be removed from the river bed shall depend on the width of the river and replenishment rate of the river.
- XXVII. Sand and gravel shall not be allowed to be extracted where erosion may occur, such as at the concave bank.
- XXVIII. Sand and gravel shall not be extracted up to a distance of 1 kilo meter (1 km.) from major bridges and highways on both sides, of five times (5x) of the span (x) of a bridge / public civil structure (including water intake points) on up-stream side and ten times (10x) the span of such bridge on down-stream side, subjected to a minimum of 250 meters on the upstream side and 500 meters on the downstream side.
- XXIX. Sand and gravel could be extracted from the downstream of the sand bar at river bends.
- XXX. Mining depth should be restricted to 3 meters and distance from the band should be $1/4^{\text{th}}$ of river width and should not be less than 7.5 meters.
- XXXI. A buffer distance / unmined block of 50 meters after every block of 1000 meters over which mining is undertaken or at such distance as may be the directed / prescribed by the regulatory authority shall be maintained.
- XXXII. River bed sand mining shall be restricted within the central $3/4^{\text{th}}$ width of the river/rivulet of 7.5 meters (inward) from river banks but up to 10% of the width of the river, as the case may be. Regulating authority while regulating the zone of river bed mining shall ensure that the objective to minimize the effects of riverbank erosion and consequential channel migration are achieved to the extent possible. In general, the area for removal of minerals shall not exceed 60% of the mine lease area, and any deviation of relaxation in this regard shall be adequately supported by the scientific report.
- XXXIII. Transportation from the river bed will be done using the existing road.
- XXXIV. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.
- XXXV. Wet sand will not be transported.

2. Ghat Jhilua Sand Ghat of Jharkhand State Mineral Development Corporation Ltd. (JSMDCL), Village : Ghat Jhilua, Circle : Godda, Distt.: Godda, Jharkhand (1.82 Ha).

(Proposal no.: SIA/JH /MIN/485643/2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 26.07.2024.

Project Category : B2 – 1(a) Mining of Minerals : Application for Environmental Clearance (EC).

EC Application for: Proposed Capacity: 9,514 Cum. / annum or 16,268 TPA (dry basis).

Project and Location Details:

Sl. no.	Parameter	Details	
1	Project Name	Ghat Jhilua Sand Ghat	
2	Lessee:	M/s Jharkhand State Mineral Development Corporation Ltd. (A Government Of Jharkhand Undertaking)	
3	Lessee Address	Khanij Nigam Bhawan, Doranda, Ranchi – 834002 (Jharkhand)	
4	Lease Area	1.82 Ha.	Acres – 4.50 Acres
5	Type of Land	Non-Forest Government waste Land (River Bed)	
6	Project Cost	Capital Cost: Rs. 11.89 Lakhs	Recurring: 2.3 Lakhs / Year
7	EMP Budget	Capital: Rs 7.49 Lakhs	Recurring: 5.74 Lakhs / Year
8	New or Expansion	New	
9	Mineable Reserves for 1 st year & subsequent year 60% of Replenished quantity	9,514 m ³ (Round-off) (dry basis)	16,268 (Round-off) Tonnes (dry basis)
10	Mine Life/ Lease Period	Lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.	
11	Man power	09	
12	Water Requirement	3.55 KLD (Drinking: 0.14 KLD, Dust Suppression: 1.93 KLD, Plantation: 1.48 KLD)	
13	Water Source	By authorised hired tankers	
14	DG Set / power	NA	
15	Crusher	NA	
16	Nearest Water Body	Kajhia Nadi	

17	Nearest Habitation	Ghat Jhilua – 0.3 Km, West Direction
18	Nearest Rail Station	Godda Railway station is located at a distance of about 8 Km in NW direction
19	Nearest Air Port	Deoghar Airport – 69 km in SW direction
20	Nearest Forest	More than 250 m, as per Forest Division. Letter No. – 1194 Dated - 29/06/2024
21	Road & Highways	Village road - 0.136 Km in North direction NH-333A (Godda-Pakur road) – 1.2 Km in NW direction

CO-ORDINATES

GPS Coordinates		
Point	Latitude	Longitude
A	24°47'58.555" N	87°15'52.988" E
B	24°48'05.485" N	87°15'49.074" E
C	24°48'06.120" N	87°15'49.971" E
D	24°47'53.048" N	87°15'56.582" E
E	24°47'50.774" N	87°15'57.814" E
F	24°47'50.145" N	87°15'56.777" E
G	24°47'52.425" N	87°15'54.800" E
H	24°47'54.128" N	87°15'53.891" E

LAND DETAILS

Khata no.	Plot no.
21	300 & 192

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Auction letter has been issued by Joint Secretary, Mines & Geology Deptt., Govt. of Jharkhand vide letter no. Kha.ni.-(Vividh)-117/2017-2090/M, dated 30.09.2022. According to provisions in Jharkhand State sand Mining Policy and its amendment. JSMDC Ltd. has been nominated as nodal agency for operating sand mines in category II.
2	CO	:	The CO, Godda Sadar vide letter no. 676/Ra., dated 14.05.2024 has mentioned the plot no. of the project is not recorded as "Jungel-Jhari" in R.S. Khatiyan & Register II.

3	DMO	:	DMO, Godda vide letter no. 700/M, dated 06.05.2024 certified that no other balughat exists within 500 m radius from proposed project site.
4	DFO Wild Life	:	DFO, Sahibganj Forest Division vide letter no. 1199, dated 19.06.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Godda Forest Division vide letter no. 1194, dated 29.06.2024 certified that the distance of forest is more than 250 meter from proposed project site.
6	DSR	:	This project is mentioned in approved DSR of Godda District (Page No. – 79, Point No. - 06)
7	Gram Sabha	:	BDO, Godda Sadar vide letter no. 512/Vi., dated 15.05.2024 informed that Gram Sabha conducted on 15.05.2024.
8	Mine Plan Approval	:	Approved by Assistant Mining Officer, Godda vide Memo No. 727/M, dated 22.05.2024.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	Opencast Manual Method	
2	Quarry Area	1.82 Ha.	Mine life/Lease Period - Lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining
3	Waste Generation	00 cum	
4	Stripping Ratio	NA	
5	Working Days	200 per year	
6	Grid excavation	25x 25 (meter) ²	
7	Elevation of Mine	37.61 m AMSL (Pre-Monsoon) & 37.91 m AMSL (Post-Monsoon)	
8	Ground Level Elevation	37.50 m AMSL	
9	Ultimate Working Depth	0.6 m	
10	Water Table	34.25 m AMSL	
11	Topography of Mine	Flat	
12	Explosive Requirement	No. blasting required	

13	Diesel/Fuel requirement	Not required for mining

Production Details

Year	Production of Sand (cum)	Production of Sand (tonnes)
1 st	9,514	16,268

The development plan submitted along with the mining plan relates to mining operation during the first year.

Land Use (Plan period)

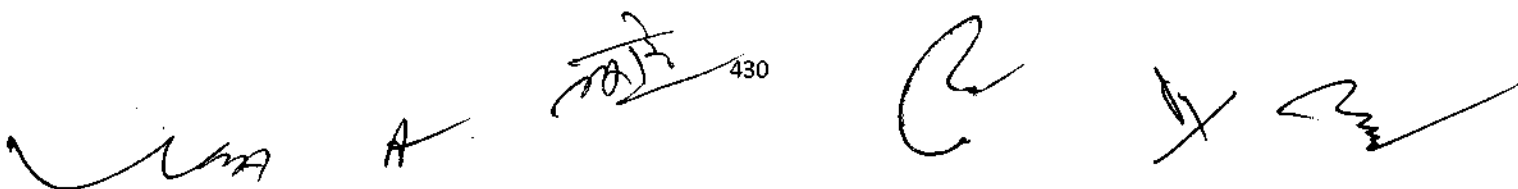
Sl. No.	Pattern of Utilization	Land Use (in Ha.)	Remarks
1	Mining Activities	1.58	Area may vary based on flow of water in the subsequent year.
2	Loss due to Safety zone & Active channel	0.24	- Distance from the bank should be 1/4th of River width and should not be less than 7.5 meters. - Mining shall be restricted within the central 3/4th width of the river/rivulet or 7.5 meters (inward) from River-bank but up to 10% of the width of the River. - Mining shall be restricted 60 % area for both side of river edge.
Total		1.82	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Along River Edge	520 m	173
2	Along Approach Road	482 m	320

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



Jharkhand. Records of same to be maintained and will be submitted with compliance report.

Budget for Environmental Management

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. @ Rs. 1000 per Tanker	--	2,00,000
2	Plantation (@Rs.1500 per plant) 263 X 1500 = 3,94,500 (Includes Fertilizer, Pesticides, Maintenance)	3,94,500	39,450
3	Tarpaulin (To improve efficiency, reduce waste and minimize environmental impact)	10,000	
4	Sand Replenishment Survey		2,00,000
5	Environmental Monitoring (One Day Monitoring) - Ambient Air (8 Point) 24 hrs - Rs. 32,000 - Water (2 Point) - Rs. 8,000 - Noise 24 hrs (5 Point) - Rs. 10,000 Total - Rs. 50,000 (Per Season) Atleast two season in a Year - Rs. 50,000 x 2 = Rs. 1,00,000	--	1,00,000
Total		4,04,500	5,39,450

Environment Monitoring Programme

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3.	Noise	5 stations	6 Monthly

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Road accidents

Transportation of sand along the public road may cause accident which may cause injury.

Preventive Measures;

- Ensure speed limit for the haulage vehicle for 40 KMPH.
- Regular maintenance of haulage road
- Appropriate navigational signs informing sensitive area like school and habitation
- Regular maintenance of the vehicles.

Dust generation

No drilling involved

- Dust mass would be supplied to workers.
- Regular sprinkling of water on road

Noise Generation

Source of noise pollution in the project would be movement of tippers / tractors transporting sand from mine to stock yard. In general tippers / tractors produce a noise level of 75 – 90 (A) measured at distance of 3m from the source.

Preventive measures

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- Plantation on both sides of haulage road.
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Following mitigation measures would be taken to minimize this impact on health

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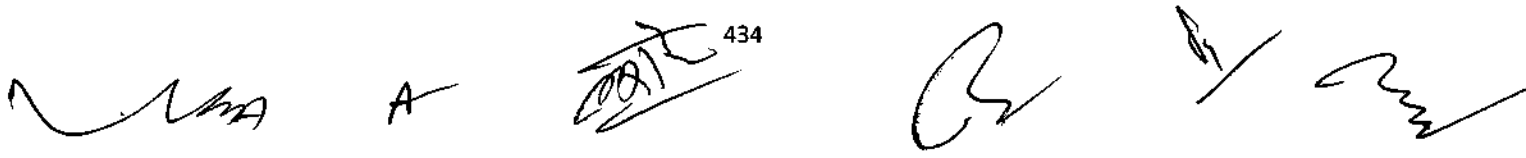
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- The Boundary Pillars of the proposed mine lease area will be maintained properly.
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- The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
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Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Ghat Jhilua Sand Ghat of Jharkhand State Mineral Development Corporation Ltd. (JSMDC), Village : Ghat Jhilua, Circle : Godda, Distt.: Godda, Jharkhand (1.82 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II alongwith the following specific conditions :

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- II. The Environmental Clearance granted for lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy.
- III. Replenishment study shall be conducted during pre-monsoon and post monsoon every year and study report have to be submitted to SEIAA / SEAC, Jharkhand. The production shall be restricted to 60% of the replenished quantity or the proposed quantity in the mine plan, which ever is less.
- IV. Suitable plant species of not less than 2 M height to be planted in area equal to twice the area of saplings proposed in Safety zone. This is to be planted in land available near mines and outside safety zone. This will be in addition to plantation in safety zone. Newly planted saplings to be maintained for minimum 3 years with Geo-Tagged photographs.
- V. Dedicated water tanker to be provided for spraying water on haul road and for irrigating newly planted saplings only. Sprinkling to be done such that the haul road is kept moistened all the time with Geo-Tagged photographs.
- VI. Pre-employment Occupational health checkup for employees to be done and thereafter at annual interval for PLFT, Audiometry and other required tests. Summary findings of same to submitted along with 6 monthly compliance.
- VII. Ensure use of Quality PPEs equivalent not less than 3M make. Records of same to be maintained and submitted within 6 monthly compliance report with Geo-Tagged photographs.
- VIII. Keep vulnerable areas unmanned. Ensure rotation of duties. Records to be maintained and submitted within 6 monthly compliance report.
- IX. Failing of any of terms & conditions mentioned in EC can lead to revocation / cancellation of EC.
- X. Project Authority will ensure that personal protective equipments such as protective clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel's.
- XI. River Sand Mining shall not be done in rainy Season (mid June to mid October of each calendar year).
- XII. Dept. of Mines & Geology, Govt. of Jharkhand shall keep a strict vigil in the compliance of relevant provisions of applicable Jharkhand Minerals (Prevention of illegal mining, Transportation and Storage) Rule 2017 and its amendment especially scientific execution of mining plan (as approved by they themselves) and report violations if any is found as well as action taken for the same.
- XIII. Project Proponent shall submit (to the SEIAA, Jharkhand, Regional Office of MoEF&CC at Ranchi, Jharkhand State Pollution Control Board) six monthly compliance report with evidence of the conditions within a fortnight after the end of every six month till validity period of Environmental Clearance.
- XIV. The project proponent before starting any activity / preparation of ground, on the leased area shall demarcate his lease hold by RCC pillars erected at the cost of lease holder after certification of the mining officer. On each pillar Geo-Coordinate and fore bearing / back bearing shall be written with permanent paint mark as described in the

mining plan. All the pillars should remain intact at same geo-coordinate. Establishment / labeling of Benchmark at each pillars or ground control points.

- XV. Extraction of sand beyond annual production capacity is not permitted.
- XVI. The Project Proponent should undertake the sand mining limited to 03 meter (three meter) depth by exclusively manual method.
- XVII. The stacking area of mined-out sand which shall be situated near the mining site within a fenced area from all sides to avoid being spread in the nearby areas by high winds and the height of stacking should not exceed 2 meter. Transportation shall be confined to day time only that is from sunrise to sunset, to avoid inconvenience to local population in any manner.
- XVIII. Mining activity shall not be done for mine lease where mining can cause danger to site of flood protection works, places of cultural, religious, historical and archaeological importance.
- XIX. Project Proponent shall submit the annual replenishment report certified by an authorized agency.
- XX. No labour camp shall be allowed in riverbed.
- XXI. Provision shall be made for housing labour with all necessary infrastructure and facilities (outside mining Block and river-bed) such as fuel for cooking, toilets / mobile toilets, safe drinking water, First-Aid facilities, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
- XXII. Labour & Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects. Occupational health surveillance program of the workers shall be undertaken periodically to observe any adverse health impact due to exposure to dust and take corrective measures, if needed.
- XXIII. The Project Proponent shall make arrangements for safe drinking water, first aid facility along with anti-venom injection, in case of emergency for the workers.
- XXIV. Sand and gravel may be extracted across the entire active channel during the dry season.
- XXV. Abandoned stream channels on the terrace and inactive floodplains be preferred rather than active channels and their deltas and flood plains. The stream should not be diverted to form the inactive channel.
- XXVI. Layers of sand and gravel which could be removed from the river bed shall depend on the width of the river and replenishment rate of the river.
- XXVII. Sand and gravel shall not be allowed to be extracted where erosion may occur, such as at the concave bank.
- XXVIII. Sand and gravel shall not be extracted up to a distance of 1 kilo meter (1 km.) from major bridges and highways on both sides, of five times (5x) of the span (x) of a bridge / public civil structure (including water intake points) on up-stream side and ten times (10x) the span of such bridge on down-stream side, subjected to a minimum of 250 meters on the upstream side and 500 meters on the downstream side.
- XXIX. Sand and gravel could be extracted from the downstream of the sand bar at river bends.

- XXX. Mining depth should be restricted to 3 meters and distance from the band should be $1/4^{\text{th}}$ of river width and should not be less than 7.5 meters.
- XXXI. A buffer distance / unmined block of 50 meters after every block of 1000 meters over which mining is undertaken or at such distance as may be the directed / prescribed by the regulatory authority shall be maintained.
- XXXII. River bed sand mining shall be restricted within the central $3/4^{\text{th}}$ width of the river/rivulet of 7.5 meters (inward) from river banks but up to 10% of the width of the river, as the case may be. Regulating authority while regulating the zone of river bed mining shall ensure that the objective to minimize the effects of riverbank erosion and consequential channel migration are achieved to the extent possible. In general, the area for removal of minerals shall not exceed 60% of the mine lease area, and any deviation of relaxation in this regard shall be adequately supported by the scientific report.
- XXXIII. Transportation from the river bed will be done using the existing road.
- XXXIV. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.
- XXXV. Wet sand will not be transported.

**3. Nimbera Sand Ghat of Jharkhand State Mineral Development Corporation Ltd. (JSMD),
Village : Nimbera, Circle : Nala, Distt.: Jamtara, Jharkhand (4.39 Ha).**

(Proposal no.: SIA/JH/MIN /487005/2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 26.07.2024.

**Project Category : B1 – 1(a) Mining of Minerals : Application for Terms of Reference (ToR)
as per EIA notification, 2006.**

ToR Application for: Proposed Capacity:102600.36Cum. / annum or 168264.59TPA (dry basis).

Project and Location Details:

Sl. no.	Parameter	Details
1	Project Name	Nimbera Sand Ghat
2	Lessee:	M/s Jharkhand State Mineral Development Corporation Ltd. (A Government Of Jharkhand Undertaking)
3	Lessee Address	Khanij Nigam Bhawan, Doranda, Ranchi – 834002 (Jharkhand)

4	Lease Area	4.39 Ha.	Acres – 10.84 Acres
5	Type of Land	Non-Forest Government waste Land (River Bed)	
6	Project Cost	Capital Cost: Rs. 17.77 Lakhs	Recurring: 25.70 Lakhs / Year
7	EMP Budget	Capital: Rs13.67 Lakhs	Recurring: 5.3 Lakhs / Year
8	New or Expansion	New	
9	Mineable Reserves for 1 st year & subsequent year 60% of Replenished quantity	102600.36 m ³ (dry basis)	Tonnes: -168264.59 tonnes(dry basis)
10	Mine Life/ Lease Period	Lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining Policy	
11	Man power	46	
12	Water Requirement	6.144 KLD (Drinking: 0.69 KLD, Dust Suppression: 3.0 KLD, Plantation: 2.454 KLD)	
13	Water Source	By authorised hired tankers	
14	DG Set / power	NA	
15	Crusher	NA	
16	Nearest Water Body	On Ajay River bed sand mining is proposed.	
17	Nearest Habitation	Nimbera – 0.6 km. – NW direction	
18	Nearest Rail Station	The nearest Railway station Bodhma is located at a distance of about 4.52 Km in SW direction	
19	Nearest Air Port	Deogarh Airport is situated at a distance of about 56 Km in N-E direction	
20	Nearest Forest	More than 250 m, as per Forest Division. vide Letter no. – 571, Dated - 26-04-2023	
21	Road & Highways	Nearest village road is 0.42 km North direction from the lease area and this road after 2.42 km North direction connected MDR (Jamtara-Nala road).	

CO-ORDINATES

GPS Coordinates		
Point	Latitude	Longitude
A	23° 54' 44.371" N	86°53' 28.914" E

B	23° 54' 40.711" N	86°53' 53.328" E
C	23° 54' 38.768" N	86°53' 52.177" E
D	23° 54' 42.451" N	86°53' 28.739" E

LAND DETAILS

Khata no.	Plot no.
25	275 & 940

STATUTORY CLEARANCES

1	LOI / Lease docs	: The Auction letter has been issued by Joint Secretary, Mines & Geology Deptt., Govt. of Jharkhand vide letter no. Kha.ni.-(Vividh)-117/2017-2090/M, dated 30.09.2022. According to provisions in Jharkhand State sand Mining Policy and its amendment. JSMDCLtd. has been nominated as nodal agency for operating sand mines in category II.
2	CO	: The CO, Nala vide letter no. 151/Ra., dated 16.02.2024 has mentioned the plot no. of the project is not recorded as "Jungel-Jhari" in R.S. Khatiyani & Register II.
3	DMO	: DMO, Jamtara vide memo no. 356/M, dated 03.05.2024 certified that other balughat exists within 500 m radius from proposed project site and total area is 55.00 Acre.
4	DFO Wild Life	: DFO, Wildlife Division, Hazaribag vide letter no. 685, dated 18.04.2024 certified that the proposed project site is outside Eco Sensitive Zone of Parasnath & Topchanchi Wildlife Sanctuary.
5	DFO Territorial	: Division Forest Officer, Jamtara Forest Division vide letter no. 571, dated 26.04.2023 certified that the distance of forest is more than 250 meter from proposed project site.
6	DSR	: This project is mentioned in approved DSR of Jamtara District (Page No. - 72, Point No. - 12)
7	Gram Sabha	: BDO, Nala vide letter no. 564/Vi., dated 03.05.2024 informed that Gram Sabha conducted on 02.05.2024.
8	Mine Plan Approval	: Approved by Deputy Director Mines, Santhal Pargana Circle, Dumka vide Memo No. 47/DDM, dated 24.04.2024.
9	Qualified Person	: Shri Malay Kumar Mukhopadhyay was present in the meeting and

		affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	Opencast Manual Method	
2	Quarry Area	4.39 Ha.	Mine life/Lease Period - Lease period i.e. 15.08.2025 as per provisions of Jharkhand State Sand Mining Policy, 2017 and extendable based on amendments in Jharkhand State Sand Mining
3	Waste Generation	00 cum	
4	Stripping Ratio	NA	
5	Working Days	200 per year	
6	Grid excavation	25x 25(meter) ²	
7	Elevation of Mine	73.9 m AMSL (Pre-Monsoon) & 75.7 m AMSL (Post-Monsoon)	
8	Ground Level Elevation	77 M AMSL	
9	Ultimate Working Depth	3.0 m	
10	Water Table	69.4 m	
11	Topography of Mine	Flat	
12	Explosive Requirement	No. blasting required	
13	Diesel/Fuel requirement	Not required for mining.	

Production Details

Year	Production of Sand (cum)	Production of Sand(tonnes)
1 st	102600.36	168264.59

The development plan submitted along with the mining plan relates to mining operation during the first year.

Land Use (Plan period)

Sl. No.	Pattern of Utilization	Land Use (in Ha.)	Remarks
1	Mining Activities	3.42	Area may vary based on flow of water in the subsequent year.

2	Loss due to Active channel	0.97	1. Distance from the bank should be $\frac{1}{4}$th of River width and should not be less than 7.5 meters. 2. Mining shall be restricted within the central $\frac{3}{4}$th width of the river/rivulet or 7.5 meters (inward) from River-bank but up to 10% of the width of the River. 3. Mining shall be restricted 60 % area for both side of river edge.
Total		4.39	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No. of Trees
1	Along River Edge	953 m	318
2	Along Approach Road	752m	500

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

EMP Budget

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. @ Rs. 1000 per Tanker	-	2,00,000
2	Plantation (@Rs.1500 per plant) 818 X 1500 = 12,27,000 (Includes Fertilizer, Pesticides, Maintenance)	12,27,000	30,000
3	Tarpaulin (To improve efficiency, reduce waste and minimize environmental impact)	140000	-

4	Replenishment survey cost	--	2,00,000
5	Environmental Monitoring (One Day Monitoring) Ambient Air (8 Point) 24 hrs – Rs.32000 Water (2 points) - Rs. 8000 Noise 24 hrs (5 point Rs.10000 Total - Rs. 50000 (Per Season) Atleast two season in a Year - Rs. 50000 x 2= Rs. 100000	--	100000
Total		13,67,000	5,30,000

Environment Monitoring Programme

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	8 stations	3 Monthly
2.	Surface Water	2 stations	3 Monthly
3.	Ground Water	8 stations	3 Monthly
4.	Soil	8 stations	3 Monthly
5.	Noise	8 stations	3 Monthly

Solid Waste Management

No solid waste is generated during the course of mining.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Sewage from rest shelter would be treated in Septic Tank soak pit.
- There is no other source for generation or discharge of trade effluent.

Air Quality Management

Sand will be mined manually. No mining equipment would be needed. However, diesel operated tippers/tractors would be used for transportation of sand from mine to stockyard.

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

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

Movement of tippers on Road – Movement of tippers on road generate dust. For mitigation of this pollution following measures will be taken

- Regular water sprinkling on Approach road by using water tankers.
- Regular repair of Approach road
- All Trucks carrying Sand outside lease area will have PUC certificate.
- Transport tippers/traders moving on public road will be covered with tarpaulin.

RISK ASSOCIATED WITH PROJECT ACTIVITIES AND THEIR MITIGATION MEASURES ARE DISCUSSED BELOW:

Road accidents

Transportation of sand along the public road may cause accident which may cause injury.

Preventive Measures;

- Ensure speed limit for the haulage vehicle for 40 KMPH.
- Regular maintenance of haulage road
- Appropriate navigational signs informing sensitive area like school and habitation
- Regular maintenance of the vehicles.

Dust generation

No drilling involved

- Dust mass would be supplied to workers.
- Regular sprinkling of water on road

Noise Generation

Source of noise pollution in the project would be movement of tippers / tractors transporting sand from mine to stock yard. In general tippers / tractors produce a noise level of 75 – 90 (A) measured at distance of 3m from the source.

Preventive measures

- Transportation activities would be confined during day time only.
- There would be a speed limit of 40 kmph for tippers. Higher is speed higher is noise.
- Regular repair and maintenance of tippers/tractors.
- Plantation on both sides of haulage road.
- Tippers having PUC certified will be allowed to be used for sand transportation.

Health Hazards

During digging and handling of sand i.e. loading, transportation and unloading of sand, workmen would be exposed to inhalation of fine dust particles. This poses a health hazard.

Preventive Measures

Following mitigation measures would be taken to minimize this impact on health

- Regular water sprinkling on haulage roads
- Tree plantation on both sides of haulage road
- Tippers / Tractors carrying sand would be covered
- Mask would be provided to workmen employed for digging, loading, transportation and unloading activities

Accident at Site

This is a project with only source of accident at site would be movement of tippers /tractors within mine site for transportation of sand.

Preventive measures

Following mitigation measures would be taken to minimise risk of road accident-

- Separate alignment for movement of loaded vehicles coming out of mine site
- Ensure speed restriction of 10 KMPH within mine site for incoming and outgoing tippers
- Regular maintenance and repair of haulage vehicles employed for sand transportation
- No overtaking of transportation vehicles within mine site
- Proper maintenance of haulage roads

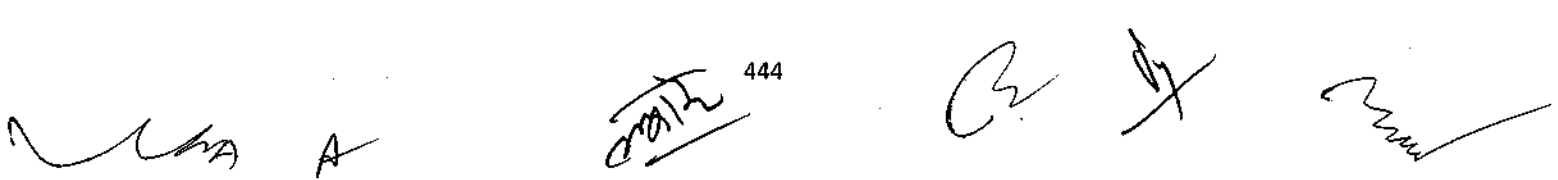
Transportation

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

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

Undertaking submitted affirming:

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

The bottom of the page features several handwritten signatures and initials. From left to right, there is a signature that appears to be 'A', followed by a signature that looks like 'MATH' with the number '444' written above it. To the right of this are two more signatures, one of which is a stylized 'C' or 'B', and a final signature on the far right that is partially cut off.

- c. If any changes are noticed in future regarding the contiguous / cluster area report issued by the mines department, then the applicable laws / rules will be binding on the Project Authorities and all necessary steps will be taken in this regard
- d. The Boundary Pillars of the proposed mine lease area will be maintained properly.
- e. One day post monsoon baseline data related to environment monitoring will be submitted with the first compliance report.
- f. The plantation work will be completed within the first year of operation. Thereafter the same will be maintained up to the Conceptual stage of the Mine.
- g. Sufficient water spray using water tankers will be done for effective dust suppression within the mine lease area and on haul roads.
- h. All the mining machineries / equipment and transport vehicles should be maintained in good condition and annually tested for fitness and PUC and records to be maintained.
- i. If any tree felling than necessary permission shall be taken from the competent authority.
- j. Personal protective equipments such as protecting clothing, helmet, goggles or other garments or equipments designed to protect from injury or infection will be provided to working personnel.
- k. Mining will be restricted upto 3 meter.

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 23, 24, 25, 26 & 27.07.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith the following specific conditions :-

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- II. Transportation from the river bed will be done using the existing road.
- III. The Mining Plan has been prepared and approved in consonance with Enforcement & Monitoring Guidelines for Sand Mining, 2020.
- IV. Wet sand will not be transported.
- V. Pre-monsoon data of current year is to be included in final EIA report.
- VI. Satellite imagery with Geo-Coordinates of pre-monsoon (current year) to be included in the final EIA report.

4. Tangidaha Stone Mine of M/s Rishi Stone Works (Partners : (i) Shri Pankaj Bhagat (ii) Shri Suraj Bhagat (iii) Shri Binay Kumar Mandal), Village : Tangidaha, Thana : Maheshpur, Distt.: Pakur, Jharkhand (2.59 Ha).

(Proposal no.: SIA/JH/MIN/488067/2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 26.07.2024.

Project Category : B1 – 1(a) Mining of Minerals : Application for Terms of Reference (ToR) as per EIA notification, 2006.

ToR Application for: Proposed Capacity: 71,258 Cum. / annum or 2,06,648 TPA

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Tangidaha Stone Mine
2	Lessee:	: M/s Rishi Stone Works, Partner- (1) PankajBhagat, (2) SurajBhagat, (3) Binay Kumar Mandal
3	Lessee Address	: Village: Kushmaha, Thana - Bossi, District - Banka, Bihar
4	Lease Area	: 2.59 Ha
5	Type of Land	: Non Forest Raiyati Land
6	Project Cost	Capital: 1.45 Cr. Recurring: 24.15 Lakhs per year
7	EMP Budget	: Capital: 5.67Lakhs Recurring: 4.56Lakhs per year
8	New or Expansion	: New
9	Mineable Reserves	: cum.: 536772 cum Tonnes: 1556639 tons
10	Mine Life	: 10 years.
11	Man power	: 38Person
12	Water Requirement	: 4.79 KLD (Drinking: 0.570 KLD, Dust Suppression: 1.264KLD, Plantation: 2.96 KLD)
13	Water Source	: From Nearby villages by tankers
14	DG Set / power	: 60 KVA D.G. Set proposed
15	Crusher	: No crusher
16	Nearest Water Body	: Ranipur river – 11 Km towards Northdirection
17	Nearest Habitation	: TangidahaVillage at 0.11km North-East direction
18	Nearest Rail Station	: Nagarnabi Railway Station is 15 km in NE direction.
19	Nearest Air Port	: Deoghar, Airport, at 104 km South West direction.

20	Nearest Forest	:	More than 250 m, as per Division Forest Officer NOC. letter no.- 1433 Dated- 04/11/2023
21	Road & Highways	:	A cart road is well connected to applied lease area from village road 112 m in North - East direction this road after 0.554 km West side connect motorable (Tangidaha, Sahargaon road), from the mine site.

CO-ORDINATES

1	Latitude	From N 24° 33' 17.02879321"	To N24° 33' 24.09053765" N
2	Longitude	From E 087° 43' 29.38491921"	To E 087° 43' 26.85412365" E

LAND DETAILS

Khata no.	Plot no.
02	140 (P) & 148
06	147
10	152

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 360/M, dated 15.03.2024.
2	CO	:	The CO, Maheshpur vide letter no. 102/Ra, dated 06.02.2024 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatyan & Register II and also mentioned that the habitation of 12-13 houses within 500 meters of proposed project site.
3	DMO	:	DMO, Pakur vide memo no. 556/M, dated 30.04.2024 certified that 07 other mining lease area (6.57 Acre, 7.09 Acre, 6.58 Acre, 3.16 Acre, 5.78 Acre, 6.88 Acre & 5.00 Acre) exists within 500 m radius from proposed project site and total area is 47.47 Acre or 19.21 Ha.
4	DFO Wild Life	:	DFO -cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 98, dated 13.01.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.
5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide memo no. 1568 dated 20.12.2023 certified that the distance of reserved / protected forest land is 1470 meter from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 555/M, dated 30.04.2024 that this project is mentioned in approved DSR of

			Pakur District as a potential area (Sl. no. 299, Page no. 132).
7	Gram Sabha	:	BDO, Maheshpur (Pakur) vide letter no. 2314/Vi. Dated 06.11.2023 informed that Gram Sabha conducted on 06.11.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 962/M, dated 01.07.2024.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Semi-Mechanized Method	
2	Quarry Area	:	2.59 Ha	Life of Mine – 10 year
3	Waste Generation	:	30832cum	
4	Stripping Ratio	:	1: 17.41 or 0.06	
5	Working Days	:	300	
6	Benches: size	:	6 m x 6 m,	
7	Elevation of Mine	:	110 - 66 AMSL	
8	Ground Level Elevation	:	101 AMSL	
9	Ultimate Working Depth	:	66 m AMSL	
10	Water Table	:	Post Monsoon – 53 m AMSL Pre Monsoon – 50 m AMSL	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	32 kg Slurry explosives/day	
13	Diesel/Fuel requirement	:	HSD – 509 liters / day (152.7 KI /year)	

Production Details

SUMMARY OF YEAR WISE PRODUCTION						
Years	Production In Cum/Year	Production In Cum/Day	O.B Production in Cum/Year	Production In Tons/Year	Prod. In Tons. /Day	Bench Height (AMSL)
1st	71258	238	30832	206648	689	A-A' (110-102) (Stone)
2nd	56252	188	0	163131	544	A-A' (102-96) (Stone)
3rd	64698	216	0	187624	625	A-A' (102-96) (Stone)
4 th	48544	162	0	140778	469	A-A' (102-96) (Stone)
5 th	45018	150	0	130552	435	A-A' (96-90)

						(Stone)
Total	285770	238	30832	828733	689	Depth : 20 m

Land Use

Existing Land Use pattern

SL	Pattern	Existing Land Use (Ha)
1	Mining Area	0.00
2	Office	0.00
3	Dumping	0.00
4	Road	0.00
5	Garland drain	0.00
6	Settling Pond	0.00
7	Green belt/ Safety Zone	0.00
8	Utilized	0.00
9	Unutilized	2.59
	TOTAL	2.59

Land Use Pattern for Proposed Plan Period:

SL	Pattern	Proposed Land Use (Acres)
1	Mining Area	4.44
2	Office	0.02
3	Dumping	0.30
4	Road	0.04
5	Garland drain	0.09
6	Settling Pond	0.02
7	Safety Zone	1.42
8	Unutilized	0.08
	TOTAL	6.41

Land Use Pattern after Life of the Mine:

SL	Pattern	Conceptual Stage Land Use (Acres)	Area to be converted in the conceptual period.
1	Mining Area	4.44	Water body
2	Office	0.02	Green belt
3	Dumping	0.30	Green belt
4	Road	0.04	Water body

5	Garland drain	0.09	-
6	Settling Pond	0.02	Water body
6	Safety Zone	1.42	Green belt
7	Unutilized	0.08	Green belt
	TOTAL	6.41	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.57 Ha	912
2	Along Approach Road	0.112 km	74
TOTAL			986

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

Budget for Environmental Management

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. (Rs. 1000 per Tanker)	--	3,00,000
2	Plantation: 74 X 1500 = Rs 1,11,000 (Gabion Plantation along approach road) 912 X 500 = 4,56,000 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	5,67,000	56,700
3	Environmental Monitoring (One Day Monitoring) Ambient Air (8 points) 24 hrs -Rs.32,000 Water (2 point) -Rs.8,000 Noise (5 points) 24 hrs - Rs.10,000 Total -Rs. 50,000 (Per Season) At least two season in a Year -Rs. 50,000 x 2 = Rs. 1,00,000	--	1,00,000

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
Total		5,67,000	4,56,700

Environment Monitoring Programme

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	8 stations	3 Monthly
2.	Surface Water	2 stations	3 Monthly
3.	Ground Water	8 stations	3 Monthly
4.	Soil	8 stations	3 Monthly
5.	Noise	8 stations	3 Monthly

Solid Waste Management

During first year 30832 cum. O.B. will be used in maintenance of mine road and left over O.B. will be used for backfilling.

Water Quality Management

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

Air Quality Management

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

Mitigation measures:

Use of Sharp Drill Bits

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

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

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

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

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

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

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

RISK ASSESSMENT

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

Hazard identification & Risk Analysis in Stone Mining operation

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

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

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

Preventive Measures:

Slope Failure

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

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

- No undercutting of any face or sides will be permitted so as to cause any overhanging (Regulation 106(5) of MMR 1961)

Drilling Operations

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

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

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

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

Dust generation during drilling

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

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

Noise Generation during drilling

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

The noise levels around drilling equipment will be continuously measured and the risk will be assessed. Unless control measures are in place no-one, except those necessary for the work

in hand, will be allowed inside the designated noisy area. In most cases this will be the drill operator.

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

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

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

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

Handling of Explosives

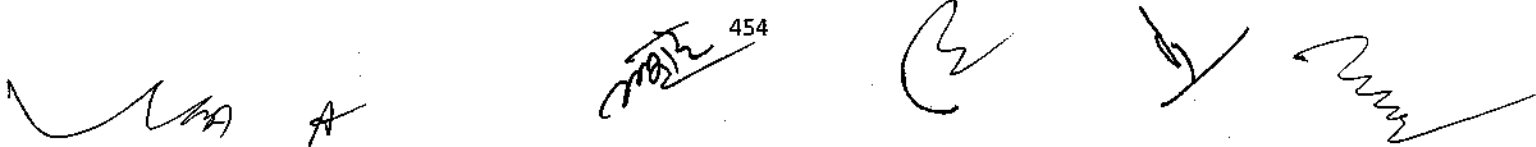
Explosives by virtue of their nature have the potential for the most serious and catastrophic accidents in the mining operations yet the way they are used is an excellent example of how risk assessment is properly applied. For example, persons holding blasters certificate granted by DGMS with proper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

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

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

Few conditions are listed below:

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

The bottom of the page features several handwritten signatures and initials. On the left, there is a large, stylized signature. In the center, there is a signature with the number '454' written above it. To the right of this, there is a circular mark resembling a stylized 'C' or a lightning bolt. Further right, there is a signature that looks like a checkmark or a stylized 'J'. On the far right, there is another signature.

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

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

Undertaking submitted affirming:

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

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 23, 24, 25, 26& 27.07.2024, the Committee recommends in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith the following specific condition :-

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

5. Narayandih Stone Mine of M/s Rishi Stone Works (Partners : (i) Shri Pankaj Bhagat (ii) Shri Suraj Bhagat (iii) Shri Binay Kumar Mandal), Village : Narayandih, Thana no. : 85, Thana : Hiranpur, Distt.: Pakur, Jharkhand (2.47 Ha).

(Proposal no.: SIA/JH/MIN/488146/2024)

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 26.07.2024.

Project Category : B1 – 1(a) Mining of Minerals : Application for Terms of Reference (ToR) as per EIA notification, 2006.

ToR Application for: Proposed Capacity- 37,440 cum/annum or 1,08,576 TPA

Project and Location Details:

Sl	Parameter	Details
1	Project Name	: Narayandih Stone Mine
2	Lessee:	: M/s Rishi Stone Works Partners: 1. Pankaj Bhagat 2. Suraj Bhagat 3. Binay Kumar Mandal
3	Lessee Address	: Village- Narayandih, Thana No.-85, Thana-Hiranpur, District- Pakur, State-Jharkhand
4	Lease Area	: 6.12 Acres (2.47 Ha)
5	Type of Land	: Non Forest Raiyati Land
6	Project Cost	Capital: 1.38 Cr. Recurring: 11.62 Lakhs per year
7	EMP Budget	Capital: 14.26 Lakhs Recurring: 5.42 Lakhs per year
8	New or Expansion	: New
9	Mineable Reserves	cum.: 2,42,711 cum Tonnes: 7,03,862 tons
10	Mine Life	: 9 years.
11	Man power	: 24 Person
12	Water Requirement	: 9.73 KLD (Drinking: 0.36 KLD, Dust Suppression: 4.2 KLD, Plantation: 5.17 KLD)
13	Water Source	: From Nearby villages by tankers
14	DG Set / power	: 60 KVA D.G. Set proposed
15	Crusher	: No crusher
16	Nearest Water Body	: Ranipur River – 10 Km towards N direction

17	Nearest Habitation	:	Narayandih Village at 0.460 km SW direction
18	Nearest Rail Station	:	Nagarnabi Railway Station, at 15.05 km in East direction
19	Nearest Air Port	:	Deoghar Airport, Deoghar is 104 km in SW direction.
20	Nearest Forest	:	DFO Pakur Division letter no.- 1569 Dated: 20/12/2023 certified that the distance of reserved / protected forest is more than 250 m from proposed project site.
21	Road & Highways	:	NH-133A (Gokulpur Road), at 7.87 Km (Aerial distance) NE direction.

CO-ORDINATES

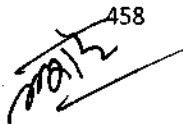
1	Latitude	From N 24° 35' 32.24145804"	To N 24° 35' 24.91452755"
2	Longitude	From E 87° 43' 15.73531055"	To E 87° 43' 07.61912822"

LAND DETAILS

J.B. no.	Plot no.
16	524 (P)
25	525
03	526
06	527
30	528 & 576
27	575
15	577 & 578

STATUTORY CLEARANCES

1	LOI / Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Officer, Pakur vide memo no. 377/M, dated 19.03.2024.
2	CO	:	The CO, Hiranpur vide letter no. 539/Ra, dated 25.10.2023 has mentioned the plot no. of the project is not recorded as "Jungle-Jhari" in R.S. Khatiyani & Register II.
3	DMO	:	DMO, Pakur vide memo no. 549/M, dated 26.04.2024 certified that 02 other mining lease area (7.09 Acre & 6.58 Acre) exists within 500 m radius from proposed project site and total area is 19.79 Acre or 8.00 Ha.
4	DFO Wild Life	:	DFO –cum- Incharge Wildlife Sanctuary, Udhwa (Sahibganj) vide letter no. 96, dated 13.01.2024 certified that the proposed project site is outside Eco Sensitive Zone of Udhwa Bird Sanctuary.




5	DFO Territorial	:	Division Forest Officer, Pakur Forest Division vide memo no. 1569, dated 20.12.2023 certified that the distance of reserved / protected forest land is 295.2 meter from proposed project site.
6	DSR	:	The DMO, Pakur has been certified vide memo no. 550/M, dated 26.04.2024 that this project is mentioned in approved DSR of Pakur District as a potential area (Sl. no. 217, Page no. 131).
7	Gram Sabha	:	BDO, Hiranpur vide letter no. 1145/Vi. Dated 25.10.2023 informed that Gram Sabha conducted on 25.10.2023.
8	Mine Plan Approval	:	Approved by District Mining Officer, Pakur vide Memo No. 965/M, dated 02.07.2024.
9	Qualified Person	:	Shri Malay Kumar Mukhopadhyay was present in the meeting and affirmed that the mine plan has been prepared by him.

Working Details

1	Mining Method	:	Opencast Mechanized Method	
2	Quarry Area	:	1.539 Ha	Life of Mine – 9 year
3	Waste Generation	:	4,641 cum top soil	26,303.3 cum over burden
4	Stripping Ratio	:	1:7.84 or 0.13	
5	Working Days	:	300	
6	Bench: size	:	6 m x 6 m	
7	Elevation of Mine	:	129-87 m AMSL	
8	Ground Level Elevation	:	129 m AMSL	
9	Ultimate Working Depth	:	87 AMSL	
10	Water Table	:	(During pre-monsoon 68 m AMSL) (During post-monsoon 71 m AMSL)	
11	Topography of Mine	:	Area represents gently sloping land.	
12	Explosive Requirement	:	48 kg Slurry explosives/day	
13	Diesel/Fuel requirement	:	HSD – 371 liters / day (111.3 KL/year)	

Production Details

SUMMARY OF YEARWISE OF PRODUCTION						
Years	Production In Cum/Year	Production In Cum/Day	O.B Production in Cum/Year	Top Soil in Cum/Year	Production In Tons/Year	Prod. In Tons. /Day

1 st	28336	94	7111	1255	82174	274
2 nd	20768	69	0	0	60227	201
3 rd	20904	70	3169.8	559.2	60622	202
4 th	37440	125	5363.5	946.5	108576	362
5 th	24426	81	10659	1881	70835	236
Total	131874	125 Max	26,303.3	4,641	382435	362 Max.

Land Use

Existing Land Use pattern

SL	Pattern	Existing Land Use (Acres)	Existing Land Use (Ha)
1	Mining Area	0.00	0.00
2	Office	0.00	0.00
3	Dumping	0.00	0.00
4	Road	0.00	0.00
5	Garland drain	0.00	0.00
6	Settling Pond	0.00	0.00
7	Green belt/ Safety Zone	0.00	0.00
8	Utilized	0.00	0.00
9	Unutilized	6.12	2.47
	TOTAL	6.12	2.47

Land Use Pattern for Proposed Plan Period:

SL	Pattern	Proposed Land Use (Acres)	Proposed Land Use (Ha)
1	Mining Area	3.80	1.54
2	Office	0.03	0.01
3	Dumping	0.22	0.09
4	Road	0.08	0.03
5	Garland drain	0.13	0.05
6	Settling Pond	0.02	0.01
7	Safety Zone	1.79	0.73
8	Unutilized	0.05	0.02
	TOTAL	6.12	2.47

Land Use Pattern after Life of the Mine:

SL	Pattern	Conceptual Land Use	Conceptual Land Use	Area to be converted

		(Acres)	(Ha)	in the conceptual period.
1	Mining Area	3.80	1.54	Water body
2	Office	0.03	0.01	Green Belt
3	Dumping	0.22	0.09	Green Belt
4	Road	0.08	0.03	Water body
5	Garland drain	0.13	0.05	-
6	Settling Pond	0.02	0.01	Water body
6	Safety Zone	1.79	0.73	Greenbelt
7	Unutilized	0.05	0.02	Greenbelt
	TOTAL	6.12	2.47	

ENVIRONMENT MANAGEMENT

Green Belt Development

S. No.	Location	Area/Length	No of Trees
1	Safety Zone	0.725 Ha	1,160
2	Along Approach Road	0.847 km	564
TOTAL			1,724

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

• EMP BUDGET

Sl.No.	Particulars	Capital Cost in Rs.	Recurring Cost in Rs. per year
1	Water facility for Dust Suppression, watering plants etc. (Rs. 1000 per Tanker)	--	3,00,000
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3	Environmental Monitoring (One Day Monitoring) Ambient Air (8 points) 24 hrs -Rs.32,000 Ground Water (2 point) -Rs.8,000 Noise (5 points) 24 hrs - Rs.10,000 Total -Rs. 50,000 (Per Season) At least two season in a Year -Rs. 50,000 x 2 = Rs. 1,00,000	--	1,00,000
Total		14,26,000	5,42,600

Environment Monitoring Programme

SL. No.	Description	No. Of Monitoring Stations	Duration
1.	Air	8 stations	3 Monthly
2.	Surface Water	2 stations	3 Monthly
3.	Ground Water	8 stations	3 Monthly
4.	Soil	8 stations	3 Monthly
5.	Noise	8 stations	3 Monthly

Solid Waste Management

4,641 & 26,303.3 cum top soil & over burden will be generated from entire Narayandih Stone Mine up to conceptual stage respectively.

Top soil will be used for plantation purpose, along the approach road, green belt & safety zone. OB will be utilized for internal mine road construction & approach road maintenance.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.
- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
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Air Quality Management

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

Mitigation measures:

Use of Sharp Drill Bits

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

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

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

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

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

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

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

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3	Blasting	Hit by fly rock (Bodily Injury)	Occasional	Major	6
4	Drilling	Exposure to Dust	Frequent	Insignificant	5
5	Bench Formation	Fall/Slide/Tripping (Bodily Injury)	Probable	Moderate	6
6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
7	Transportation	Vehicle Accident, Exposure to Dust	Remote	Minor	16

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

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

Preventive Measures:

Slope Failure

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

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

Drilling Operations

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

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

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

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

Dust generation during drilling

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

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

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

Noise Generation during drilling

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

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

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

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

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

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

Handling of Explosives

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

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

- Poorly designed shots can result in misfires, early ignition and flying rock.

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

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

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

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

- Mine road shall be made smooth regularly with a road roller.
- Mine road will be cleaned daily to remove fallen rock/stones for smooth transportation.
- Mine road will be made sufficiently wide to keep two-way traffic.
- Mine roads will be designed as per the specifications given under MMR 1961.

- Regular water sprinkling will be done on mine road and haul road to avoid suspension of dust.
- All transportation within the mine lease area should be carried out directly under the supervision and control of management.
- The vehicles will be maintained in good working condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Navigation signs will be provided at each and every turning point up to the main road (wherever required)
- To avoid danger while reversing the vehicles especially at working place/loading points, stopper should be posted to properly guide reversing/spotting operating.
- Only trained drivers will be hired.

Undertaking submitted affirming:

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

Based on the information contained in the documents submitted and the presentation made before the State Level Expert Appraisal Committee (SEAC) during its meetings held during 23, 24, 25, 26& 27.07.2024, the Committee recommends in the light of Hon'ble NGT,

Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 for issuing of ToR to SEIAA for undertaking detailed EIA / EMP study as mentioned in Annexure III alongwith following specific condition :-

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

6. Tangidaha Stone Deposit of Shri Ajay Kumar Bhagat, Mauza : Tangidaha, Thana no. : 08, Thana : Maheshpur, Distt. : Pakur, Jharkhand (2.66 Ha).

(Proposal No. : SIA/JH/MIN/ 482560/2024).

EC Application for : 91,665cum / year (max)
Overburden:36,855 Cum. during plan period.
DG Set: NA
Crusher- Not proposed

Name of the consultant : Sathi Planners Pvt. Ltd., Ranchi, Jharkhand.

This is a new project which has been taken for appraisal on 26.07.2024.

Project Category : B 1 : 1 (a) Mining of Minerals as per EIA notification, 2006.

The State Expert Appraisal Committee, Jharkhand deliberated the project during its 105th meeting held on 15.06.2023 and SEIAA, Jharkhand has approved the ToRs in 106th meeting held on 03rd & 04th July, 2023. TOR for the project was issued by SEIAA, Jharkhand vide letter no. EC/SEIAA/2023-24/2872/2023/184, dated 10.07.2023. The final EIA / EMP submitted by PP to SEAC on 24.06.2024.

Project and Location Details :

Sl.	Parameter	Details
1	Project Name	: Tangidaha Stone Deposit Project Type – Stone Mine
2	Lessee:	: Shri Ajay Kumar Bhagat
3	Lessee Address	: Village- Dumarchir, Post – Dumarchir, Thana – Amrapara, District – Pakur, Jharkhand

4	Lease Area	:	Ha: 2.66	Acres: 6.57
5	Type of Land	:	Non-Forest – Raiyati Land	
6	Project Cost	:	Capital : 135.85 Lakhs	Recurring : 7.84 Lakhs
7	EMP Budget	:	Capital: Rs. 65.315 Lakhs (including Funds allocated to address the Public hearing issues)	Recurring: Rs. 5.20 Lakhs/ year (Proposed)
9	New or Expansion	:	New	
10	Mineable Reserves	:	Cu.M.: 7,54,785	Tonnes: 21,13,398
11	Mine Life	:	8.23 years only.	
12	Manpower	:	37 Person	
13	Water Requirement	:	8.05 KLD (Drinking:0.56 KLD, Dust Suppression: 0.08 KLD, Plantation: 7.41 KLD)	
14	Water Source	:	Water will be sourced from Authorized Water Tanker	
15	DG Set / power	:	20 KVA	
16	Crusher	:	Not Applicable	
17	Nearest Water Body	:	Bansloi River – 7.75 km- South	
18	Nearest Habitation	:	Tangidaha	
19	Nearest Rail Station	:	Pakur Railway station – 15.80 km - NE	
20	Nearest Airport	:	Kazi Nazrul Islam Airport – 115 km-SW	
21	Nearest Forest	:	More than 250 m, as per forest division. Letter no – 77 Dt- 07-01-2022	
22	Road & Highways	:	Hirapur-Maheshpur Road is about 1.15 Km in W direction	

CO-ORDINATES

Corner Point	Latitude	Longitude
1	24°33'13.59"N	87°43'48.05"E
2	24°33'13.50"N	87°43'47.79"E
3	24°33'13.67"N	87°43'47.53"E
4	24°33'13.97"N	87°43'47.39"E
5	24°33'14.20"N	87°43'47.54"E
6	24°33'14.45"N	87°43'46.46"E
7	24°33'14.54"N	87°43'46.43"E
8	24°33'14.63"N	87°43'46.07"E
9	24°33'14.53"N	87°43'46.03"E
10	24°33'14.27"N	87°43'44.64"E
11	24°33'13.87"N	87°43'43.35"E

12	24°33'15.78"N	87°43'40.37"E
13	24°33'16.93"N	87°43'40.90"E
14	24°33'17.39"N	87°43'40.44"E
15	24°33'17.37"N	87°43'40.17"E
16	24°33'18.49"N	87°43'38.60"E
17	24°33'18.74"N	87°43'38.72"E
18	24°33'18.81"N	87°43'38.01"E
19	24°33'19.42"N	87°43'36.87"E
20	24°33'20.91"N	87°43'37.86"E
21	24°33'19.62"N	87°43'40.80"E
22	24°33'18.44"N	87°43'43.05"E
23	24°33'18.05"N	87°43'44.77"E
24	24°33'16.84"N	87°43'45.65"E
25	24°33'15.56"N	87°43'47.90"E
26	24°33'14.00"N	87°43'48.70"E

LAND DETAILS :

Khata No.	Plot No.
02	172, 173 (P), 174 (P) & 175 (P)
03	162 (P)
06	159 (P)
08	160 (P)
10	161 (P)
11	164 (P)
12	163 (P)

STATUTORY CLEARANCES :

1	LOI/Lease docs	:	The Letter of Intent (LoI) has been issued by District Mining Office, Pakur vide letter no. 634/M, dated 09.04.2022.
2	CO	:	The CO, Maheshpur vide letter no. 814/Ra, dated 20.11.2021 has mentioned the plot no. of the project is not recorded as "Jungle Jhari" in R.S. Khatyan & Register II.
3	DMO	:	DMO, Pakur vide memo no. 2134/M, dated 01.10.2022 certified that 02 other mining lease areas (7.09 Acre & 5.00 Acre) exists within 500 m radius from proposed project site

			and total area is 18.66 Acre or 7.55 Ha.
4	DFO Wild Life	:	Divisional Forest Officer, Wildlife Hazaribagh vide letter no. 2123, dated 02.12.2021 certified that the proposed project is outside Eco Sensitive Zone of Udhwa Lake Bird Sanctuary.
5	DFO Territorial	:	DFO, Pakur vide letter no. 77, dated 07.01.2022 certified that the distance of reserved / protected forest is more than 250 m from proposed project site.
6	DSR	:	The DC-cum-District Magistrate, Pakur vide letter no. 573/M, dated 18.03.2023 has informed that this project is part of District Survey Report (DSR) of Pakur district and accordingly necessary action with regard to Environmental Clearance can be taken.
7	Gram Sabha	:	BDO, Maheshpur vide letter no. 102/Vi, Dated 15.01.2022 informed that Gram Sabha conducted on 17.01.2022.
8	Mine Plan Approval	:	Deputy Director Mines, Dumka vide letter no. 288/DDM, dated 10.06.2023.
9	Public Hearing	:	Public Hearing conducted on 10.11.2023.
10	Baseline Monitoring Data	:	1 st February, 2023 to 30 th April, 2023.

WORKING DETAILS

1	Mining Method	:	Open Cast Semi Mechanized Mining
2	Quarry Area	:	1.82 Ha. Life of Mine -8.23 Years
3	Waste Generation	:	36,855 Cum. (O.B.)
4	Stripping Ratio	:	1:0.08
5	Working Days	:	300 days/year
6	Bench: size & No	:	5 m x 5 m, No. of benches -9
7	Elevation of Mine	:	154 – 152 AMSL
8	Ground Level Elevation	:	152 AMSL
9	Ultimate Working Depth	:	122 AMSL
10	Water Table	:	111 AMSL and
11	Topography of Mine	:	Gently sloping area
12	Explosive Requirement	:	35.28 Kg Slurry explosives/day
13	Diesel/Fuel requirement	:	HSD – 1124 liters / day (337.2 KL/year)

PRODUCTION DETAILS :

Year	Production of Stone in Cum.	Production of Stone in Tonnes	Removal of Soil in Cum.
1 st Year	85,860	2,40,408	36,855
2 nd Year	85,590	2,39,652	0
3 rd Year	91,665	2,56,662	0
4 th Year	85,725	2,40,030	0
5 th Year	85,725	2,40,030	0
Total	4,34,565	12,16,782	36,855

LAND USE**Existing Land Use pattern**

Category	Area in Ha.
Mining Area	0.00
Office	0.00
Dump	0.00
Road	0.00
Garland Drain	0.00
Safety Zone	0.00
Settling Tank	0.00
Unutilised	2.66
Total	2.66

Land Use Pattern for Current Plan Period:

Pattern	Land Use (Ha)
Mining Area	1.82
Office	0.01
Dumping	0.04
Road	0.02
Garland drain	0.02
Settling Pond	0.01
Safety Zone	0.66
Unutilized	0.08
TOTAL	2.66

Land Use Pattern after Life of the Mine :

Pattern	Land Use (Ha)	Area to be converted in the conceptual period.
Mining Area	1.82	Water body
Office	0.01	Plantation
Dumping	0.04	Plantation

Road	0.02	Water Body
Garland drain	0.02	-
Settling Pond	0.01	-
Safety Zone	0.66	Plantation
Unutilized	0.08	Plantation
TOTAL	2.66	

ENVIRONMENT MANAGEMENT

Green Belt Development

SL	LOCATION		Area/Length	No of Trees
1	Green Belt & Other reclaimed area	:	0.71Ha	1775
2	Haul /Approach Road	:	0.02Km. + 1 Km	696 Tree both side approach road. (Two row Plantation)

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

EMP BUDGET

Sl. No.	Environmental Protection Measures	Capital Cost (In Rupees)	Recurring Cost (In Rupees) Per year
1	Dust Suppression & Dust Suppression, Watering Plants etc. (1000 per Day)	-	3,00,000
2	Plantation: 696 X 1500 = Rs 10,44,000 (Gabion Plantation along approach road) 1775 X 500 = 8,87,500 (Plantation within lease area) (also includes Fertilizer, Pesticides, Maintenance)	19,31,500	1,20,000
3	Environmental Monitoring (One Day Monitoring) Ambient Air (8 points) 24 hrs -Rs.32,000 Water (2 point) -Rs.8,000 Noise (5 points) 24 hrs - Rs.10,000 Total -Rs. 50,000 (Per Season) At least two season in a Year -Rs. 50,000 x	-	1,00,000

	2		
	= Rs. 1,00,000		
Total		19,31,500	5,20,000
Fund allocation to address the Public Hearing issues		46,00,000	0.00
Total : 46.00 Lakhs			
Grand Total (In Lakhs)		65,31,500	5,20,000

NOTE : The above mentioned fund to address the issues of public hearing already allocated under EMP Budget.

- **Environment Monitoring Programme (For Half yearly Compliance)**

Sl. No.	Description	No. of Monitoring Stations	Duration
1	Ambient Air	8	6 Monthly
2	Water (Ground Water and Surface Water)	2	6 Monthly
3	Noise	5	6 Monthly

- **Baseline Study Period for EIA - March to May, 2023**

ACTION PLAN FOR PUBLIC HEARING

Sl. No.	Concern About	PP Respond	AMT. Prop osed	1 st Year	2 nd Year	3 rd Year	4 th Year	5 th Year
1	Tangidah Village people raised concern that Mining work should be carried out within the mining area only and care should also be taken to ensure that mining should not damage their Building & local infrastructure.	• Proponent has ensured that mining work will be done within the mining area only. • The mining site is more than 500 m far away from the Habitation area still some Precautionary measures will be taken :- 1. A maximum speed limit of movement of heavy vehicle to 30 KMPH would be imposed. 2. It is proposed to provide speed breaker / rambles along the evacuation route in stretch passing through populated area. 3. Daytime Blasting: Blasting operations will be restricted to daytime hours, likely to minimize	10.00	2.00	2.00	2.00	2.00	2.00

		disruption to nearby residents and ensure better visibility and control over the process.. 4. Control Blasting: Delay detonators will be used during multi-row blasting to control the explosion and minimize the impact on the surroundings 5. Enhanced Safety: The use of nets adds an additional layer of safety for both workers and nearby residents by reducing the risk of injury or damage from flying debris. These precautions are essential to mitigate the potential risks associated with blasting operations in proximity to inhabited areas 6. Evacuation Procedure- A Siren will be used to alert and evacuate all persons within a minimum radius of 500 m from the blasting site, minimizing the risk of injury or damage to near by infrastructure 7. Plantation- Intensive Plantation to mitigate the adverse effects of blasting activities. Rs. 2.00 Lakh per year allocated for transportation road maintenance						
2	Tangidah Village People demanded that local people should be preferred for employment in the project.	The proponent also assured that local people will be given preference in offering job in the project. The proponent informed the congregation that a sum of Rs. 12.50 Lakhs has been kept for Socio – economic Development of the Village .	Rs. 12.50 Lakhs	2.50	2.50	2.50	2.50	2.50
3.	Tangidah Village people demanded for regular medical	Proponent has ensured that regular medical Health Camp will be organized in Tangidah Village.	Rs. 7.50 Lakhs	1.50	1.50	1.50	1.50	1.50

	Health Camp in their village.	The proponent informed the congregation that a sum of Rs. 7.50 Lakhs has been kept for organization of Medical Health Camp						
4	Tangidah Village people have demanded Drinking Water Facility for their village .	Proponet has ensured to install two Hand pumps in Tangidah Village as per Population of the village .	Rs. 2.00 Lakhs	2.00	-	-	-	-
5.	Tangidah Village people have demanded Fencing around the Tangidah Mine Site .	Propnent has ensure that Barbed Wire Fencing with Cement Pole will be done in the first year only	Rs. 4.50 Lakhs	4.50	-	-	-	-
6.	Tangidah Village people have demanded Shed Construction in their Village.	Proponent has ensured that Shed will be constructed in their Village. The proponent informed the congregation that a sum of Rs. 2.00 Lakhs has been kept for this.	Rs. 2.00 Lakhs	-	-	-	-	-
7.	Tangidah Village people have demanded Playground and Sports Kits.	The proponent informed the congregation that a sum of Rs. 5Lakhs has been kept for this.	Rs. 5.00 Lakhs	1.00	1.00	1.00	1.00	1.00
8.	Tangidah Village people have demanded 5 goats and some monetary help from time to time.	The proponent has kept 2 Lakhs for these Socio-Econmoc Work.	Rs. 2.50	0.50	0.50	0.50	0.50	0.50
Total			46.00	14.00	7.5	7.5	7.5	7.5

• Solid Waste Management

During the plan period 36,855 cum. O.B. will be removed, which will be used in maintenance of mine road and left over O.B. will be used for backfilling.

Water Quality Management

- Mining will be confined to above Ground Water Table (GWT). No mining will be done below GWT.
- Rainwater in quarry will be collected in a collection pit at mine floor. Arrangements would be made for pumping out this water regularly during rainy season.

- Water pumped out from quarry would be collected in a settling sump to be located within lease area. Desilted water will be allowed to flow into natural drainage.
- Garland drain would be provided on upper contour around the quarry. Water collected in Garland drain would be diverted to natural drainage system.
- Foot wall & Drain would be provided at edge of external dump water collected in foot drain would be diverted to settling sump for desilting.
- Sewage from rest shelter would be treated in Septic Tank soak pit.

Air Quality Management

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

Mitigation measures:

Use of Sharp Drill Bits

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

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

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

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

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

Movement of Trucks on Road – Movement of Trucks on Road generate dust For mitigation of this pollution following measures will be taken

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

RISK ASSESSMENT

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

Hazard identification & Risk Analysis in Stone Mining operation

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

6	Loading/Unloading	Bodily injury by hitting by loading material, Exposure to Dust	Very Unlikely	Minor	20
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NOTE: *Score 1 to 4 High Risk, 5 to 12 Medium Risk & 13 to 25 is low risk.

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

Preventive Measures:

Slope Failure

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

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

Drilling Operations

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

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

Falls from the edge of a bench

While the primary hazard is that of the driller falling over the edge of a working or abandoned bench, the risk of minerals or materials falling onto workers at the foot of the face should not be overlooked. A face and bench are a necessary part of a working quarry and therefore it is not possible to remove the hazards associated with them.

While others may need to work at or near the edge of a working bench the person most at risk

during the drilling operation is the driller. Others such as the manager of the mine or maintenance personnel, may approach the bench edge during the drilling operation in the event of a breakdown of the drilling equipment.

Control Measures

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

- Provision to attach a safety line to the drilling rig and provide a harness for the driller to wear.
- Restricted access to the area to all persons except those necessary for the drilling operation.

Dust generation during drilling

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

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

Noise Generation during drilling

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

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

The risk is highest at older machines. Newer large drilling machines are provided with sound insulated operating cabins which control the noise level within the cabins to acceptable levels. Hence, it will be ensured that newly updated machines will be used for drilling.

Other control measures will include training operators and providing them with ear protection, although the latter should only be seen as an interim precaution until a permanent solution can be found.

Blasting Operations

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

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

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

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Handling of Explosives

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

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

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

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

Health Hazards

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

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

Accident at Site

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

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

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

Transportation

The usual method of transporting minerals from the working face is by trucks / tippers/dumpers. Large earth moving equipment's are used for loading /transporting large

quantity of mineral from a mine. During transportation of minerals in the mining area, utmost care will be taken by the vehicle operator to avoid any accident with any incoming vehicle by keeping sufficient gap between the two vehicles, keep safe distance from the edge of the mine face, avoid any accident to a worker crossing the haul road and shall maintain low speed. The vehicle operator shall not try to overtake another vehicle.

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

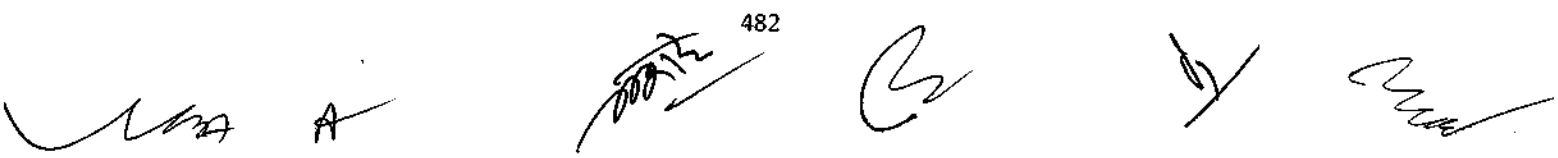
Undertaking submitted affirming:

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

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

Based on the presentation made and information provided, the Committee in the light of Hon'ble NGT, Principal Bench, New Delhi order dated 13.09.18 and MoEF& CC O.M dated 12.12.18 decided that the proposal for Tangidaha Stone Deposit of Shri Ajay Kumar Bhagat, Mauza : Tangidaha, Thana no. : 08, Thana : Maheshpur, Distt. : Pakur, Jharkhand (2.66 Ha) is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure – II alongwith the following specific conditions :

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



7. Proposed Residential Building Project "Assri Heritage City" of M/s Assri Developers Private Limited, Village : Hesag, Haria, Thana : Jagarnathpur, Thana no.: 247, Distt. : Ranchi, Jharkhand.

(Proposal No : SIA/JH/MIN/ 488875/2024)

Project Category: B2 - 8(a) Building and Construction project– Application for Environment Clearance (EC) as per EIA notification, 2006.

Name of the consultant: Rian Enviro Pvt. Ltd., Patna, Bihar

This is a new project which has been taken for appraisal on 26.07.2024.

M/s Assri Developers Pvt. Ltd. is proposed to develop Housing Project "Assri Heritage city" on the total land area measuring **6742.34 Sqm** located at Thana - Jagarnathpur, Village – Hesag, Hatia, District- Ranchi, State- Jharkhand. The total build-up area is **27545 sqm**.

Salient Features of the Project

Sr. No.	Particulars	
1.	Latitude	23°17'40.33"N
2.	Longitude	85°18'48.63"E
3.	Plot area	6742.34 Sqm.
4.	Proposed FAR @3.35	22645 Sqm.
5.	Total residential built-up area Proposed	20622.6 Sqm.
6.	Total EWS/LIG Built-up Area	2022.49 Sqm.
7.	Total Built-up Area	27545 Sqm.
8.	Greenbelt area @ (16.20% hard+3.80% soft)	1350.00 Sqm.
9.	Ground Coverage	2149.77 Sqm.
10.	Maximum Height of the Building (m)	Approx. 40 m
11.	Power Requirement	1665 KW
12.	Power Backup	2 DGs of 500 KVA
13.	Total Water Requirement	~111 KLD
14.	Fresh/Domestic Water Requirement	~75 KLD
15.	Reuse of Recycled Water	~74 KLD
16.	Waste Water Generated	~92 KLD
17.	STP Capacity	110 KLD
18.	Solid Waste Generated (Operational)	~486 Kg/day
19.	Biodegradable Waste (Operational)	~292 Kg/day
20.	Non-Biodegradable Waste (Operational)	~194 Kg/day
21.	Number of Tower	03 (A, B & C)

22.	Basement	1
23.	Stories	B+G+11
24.	Rain Water Harvesting Pits (with size)	5 Nos. (15.71 Cumec)
25.	Total Cost of the project:	45 Crore
26.	EMP Budget	During Construction: Capital: 32 Lakhs Recurring: 15 Lakhs Operational Cost: Capital: 201 Lakhs Recurring: 15.5 Lakhs
27.	Construction Phase:	i) Water Requirement & Source Fresh water – 9 KLD Treated wastewater-12 KLD Source: Tanker water supply ii) STP (Modular) 20 KLD

Land Details :

Khata no.	Plot no.
03	953
145	972
131	954
161	952

Details of Site Surroundings and Connectivity

S. No.	Description	Distance and Direction
1.	Nearest Junction Nearest Railway Station	Hatia Railway Station Balasiring - Train station Argora - Train station Approx.1.65 Km towards NNW Approx. 4.36 Km towards SW Approx.5.75 Km towards North
2.	Nearest Airport	Birsa Munda Airport, Ranchi Approx. 2.75 km towards NNE
3.	Nearest Village	Sri Ram Nagar Ekta Nagar Patel Nagar Approx. 0.32 Km towards East Approx. 0.40 Km towards SE Approx. 0.38 Km towards South
4.	Nearest Highway/Roads	Hatia Main Road Don Bosco Road Approx. 0.10 Km towards West Approx. 0.26 Km towards ENE

5.	Nearest School & College	National Institute of Advanced Manufacturing Technology (Formerly NIFFT) Govt. High School Hatia Government Primary School Dhurwa Hinoo United High Government School	Approx. 0.40 Km towards WSW Approx. 0.88 Km towards SSW Approx. 4.08 Km towards SW Approx. 3.65 Km towards North
6.	Nearest Hospital	Summer Hospital & Research Centre Pvt Ltd. Ashish Sewa Sadan, Tupudana – Hospital Heritage Hospital, Tupudana	Approx. 0.82 Km towards North Approx. 3.06 Km towards South Approx. 3.40 Km towards South
7.	Places of worship	Shri Shiv Mandir Devi Mandap Hesag Shiv Mandir, Hesag	Approx. 0.34 Km towards ENE Approx. 0.70 Km towards East Approx. 1.34 Km towards East
8.	Water Bodies	Subarnarekha River	Approx. 4.00 Km towards North
9.	Reservoir	Chittaranjan Talaab Dhurwa Dam Ranchi Lake Sanatorium Lake	Approx. 3.94 Km towards WNW Approx. 5.58 Km towards West Approx. 7.84 Km towards North Approx. 5.50 Km towards South
10.	Nearest Town	Ranchi	Approx. 5.45 Km towards North
11.	Reserve Forest/ Zoo	Huringdag Hill Range Ranchi Biodiversity Park	Approx. 9.90 Km towards ESE Approx. 5.50 Km towards SE

Details of Building Blocks

Block	3 BHK	2 BHK	1 BHK	Total No. of units	Population	No. of Floors	Height of the Building
Block A	66	11	--	77	451	B+G+11	Max. 39.90 meter
Block B	66	11	--	77	451	B+G+11	Max. 39.90 meter
Block C (EWS/LIG)	--	16	16	32	144	G+8	Max. 39.90 meter

Total		186	1046		

Calculation of Population

Block	Flat	Population
Residential Block	186	1046
Visitors	10% of Residential Population	144

Parking Details

Sl. No.	Details	Area (SQM)
1.	Total Car Parking required	185 Nos.
2.	Total covered parking	146 Nos.
3.	Total open car provided	42 Nos.
4.	EV charging station @10% car parking	19 Nos.
5.	Total Car Parking provided	186 Nos.
6.	Total two-wheeler parking required	250 Nos.
7.	Total covered two-wheeler parking provided	24 Nos.
8.	Total open two-wheeler parking provided	230 Nos.
9.	EV charging station @10% two-wheeler parking	25 Nos.
10.	Total two-wheeler parking Provided	254 Nos.

Calculation of Greenbelt

Total Plot Area	6242.34 Sqm
Landscape area provided @ ~20.02% of Plot Area	1350.47 Sqm
Total No. of Trees will be Planted @ 1 tree per 80 Sqm. of Plot Area	Say 78 Nos.

Details of Water Requirement

Description	No. of units/Area in Sqm	Unit Population	Population	Unit water consumption (lpcd)	Total water required (kl)	Fresh water required (kld)	Flushing (kld)	Total Wastewater (kld) (80% of domestic +100% Total flushing)
Block A	77	7/6/5/4	451	100 (70+30)	45100	31570	13,530	38786
Block B	77	7/6/5/4	451	100(70+30)	45100	31570	13,530	38786
Block C (EWS/LIG)	32	7/6/5/4	144	100(70+30)	14400	10080	4,320	12384
Visitors (10% of the residential population)			144	15	2160	1440	720	1872
Total					106,760	74,660	32,100	91828

KLD					107 KLD	75 KLD	32 KLD	92 KLD
Reuse of treated water								
Horticulture	1350.47 Sqm.	...	...	3 liter/sqm of Landscape area	4			
Subtotal II					4			
Grand Total I+II					111 KLD			

Energy Conservation Measures

S. No.	Net Energy saved	
1.	Solar power generation will be @ 5% of total power consumption and lighting will be done in the common areas, Signages, entry gates and boundary walls etc	83 KW
2.	LED Based lighting will be done in the dwelling units	13.58 KVA
3.	Usage of energy efficient Lift (VVVF non gear lifts)	30 KW
4.	Total Energy saved	129 KW (7.78 %)
5.	Total Energy consumption	1665 KW
6.	Energy saving in Residence Envelope Transmittance Value (RETV)	5 %
8.	Total Energy saving	12.7 %

Statutory Clearances :

1	Land Docs	:	M/s Assri developer Pvt Ltd has entered in to development agreement with the land owners.
2	DFO Forest Distance	:	DFO, Ranchi Forest Division vide letter no. 1461, dated 27.04.2024 certified that the distance of reserved / protected forest is more than 250 meters from project site.
3	DFO wildlife	:	DFO, Wildlife Division, Ranchi vide letter no. 309, dated 22.04.2024 certified that proposed project site is out side Eco Sensitive Zone of Palkot Wildlife Sanctuary.
4	CO certificate	:	The CO, Namkum (Ranchi) vide letter no. 660(ii), dated 02.07.2024 has mentioned the plot no. of the project is not recorded as "Jangle Jhari" in R.S. Khatiyani.
5	AAI NOC	:	Airport authority of India issued NOC vide NOC ID no. RANC /EAST /B/ 121423/853602, dated 10.01.2024.
6	Building Plan	:	Conceptual Plan submitted.
7	Fire Department	:	A Fire Advisory has been issued by Fire Department, Jharkhand, Ranchi, vide memo no. 4022/Tech./2024, dated 25.06.2024.
8	Water supply	:	Water supply assurance has been issued by Ranchi Municipal Corporation, Ranchi (Water Supply Section) vide letter no.

approval	167/wss dated 06.04.2024.

Environment Management Plan: Construction Phase

Sr. No.	Component	Particulars	Capital Investment (Lakhs)	Recurring Expenditure per Annum (Lakhs)
1.	Air	1 No. of Anti-smog gun & Water Sprinklers	5.0	2
2.	Water	Mobile Toilets & Septic Tanks	3.0	1.5
3.	Solid and C&D Waste and its Management	Stack yard and its management	5.0	2.5
4.	Occupational Health & Safety	Health medical checkup of workers, PPEs for Workers	3	2.0
5.	Environment Monitoring & Management	Environment Monitoring as per monitoring plan 1. Green Curtain on under construction building 2. Wind breaking wall of 3-meter height	11.0	4.0
6.	Green Belt	Development and maintenance of green belt	5.0	3.0
Total (Rs.)			32	15

Environment Management Plan: Operation Phase

Sr. No.	Component	Particulars	Capital Investment (Lakhs)	Recurring Expenditure per Annum (Lakhs)
1.	Air	Stack emission control	4.0	0.5
2.	Water	Sewage Treatment Plant (STP)	55.0	5.0
3.	Rain Water Harvesting	Installation of RWH System & Annual Cleaning of RWH tank	10.0	1.0
4.	Solid waste Area and its Management	Purchase of Containers for Storage of Waste and installation of OWC	17.0	1.0

5.	Fire safety	Emergency Preparedness, Fire hydrant systems, fire extinguishers, emergency control room, etc	95.0	2.0
6.	Environment Monitoring & Management	Environment Monitoring as per monitoring plan	0.0	2.0
7.	Green Belt	Development and maintenance of green belt	5.0	2.0
8.	Others	Energy saving devices, miscellaneous	15.0	2.0
Total (Rs.)			201	15.5

Monitoring Plan

Environmental monitoring will take place in every six months or as per CTE/CTO during Construction and operations phase.

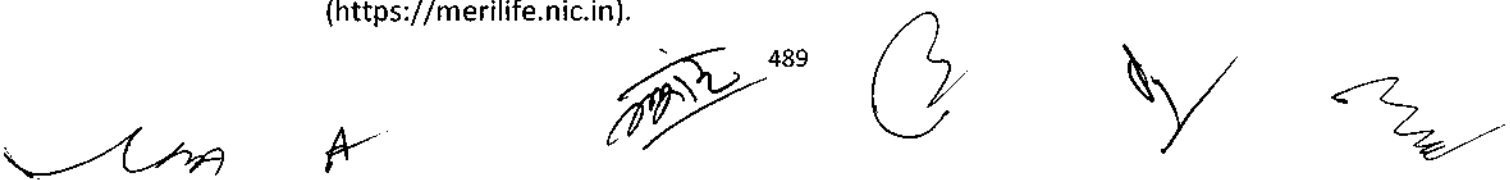
Undertaking affirming that:

- Ground water will be used only after receiving NOC from authorized body
- If any tree cutting will required on the site, proper NOC will be received from the authorized body
- No construction work started before EC
- 111 Kld of waste water will be used in operation phase and 100% of the waste water will be treated out of which 74 kld treated water will be reused for flushing, irrigation, DG cooling etc.
- 1665 Kva of power will be required during operation of the building.

Based on the presentation made and information provided, the Committee decided that the proposal for Proposed Residential Building Project "Assri Heritage City" of M/s Assri Developers Private Limited, Village : Hesag, Haria, Thana : Jagarnathpur, Thana no.: 247, Distt. : Ranchi, Jharkhand is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure –I alongwith the following specific conditions :

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

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

8. Proposed Residential Building Project "Green City" of M/s Jaysri Developers & Builders, Village : Argora, Thana : Argora, Thana no.: 207, Distt. : Ranchi, Jharkhand.

(Proposal No : SIA/JH/MIN/ 489023/2024)

Project Category: B2 - 8(a) Building and Construction project- Application for Environment Clearance (EC) as per EIA notification, 2006.

Name of the consultant: Rian Enviro Pvt. Ltd., Patna, Bihar

This is a new project which has been taken for appraisal on 26.07.2024.

M/S Jaysri Developers & Builders is Proposed Residential Building Project "Green City" on the total land area measuring 9663 sqm (Tower I, II + EWS Tower) located at Village- Argora, Thana- Argora, Thana No.- 207 Dist.-Ranchi, State- Jharkhand. The total build-up area is 38981.08 sqm.

Salient Features of the Project

Sr. No.	Particulars	
1.	Latitude	23°20'59.29"N
2.	Longitude	85°17'36.25"E
3.	Total Plot area	9663 Sqm.
4.	Permissible FAR	3.5
5.	Total FAR Achieved	2.69
6.	Residential Building Built-up area (FAR)	26058.77 Sqm.
7.	Residential Building Non-FAR area	12922.31 Sqm.
8.	Total Built-up Area	38981.08 Sqm.
9.	Proposed Ground Coverage	4822.51 Sqm.
10.	Total no. of Units	228 Nos. (Tower I-48 units, Tower II-96 Units, Tower III- 84 units)
11.	Parking Area Provided (Cars)	3404 Sqm.
12.	Parking Area Provided (Scooter)	444 Sqm.
13.	Total Parking Area Provided	3848 Sqm.
14.	Green Belt area Provided @26.78% (16.78 % Hard Green + 10 % Soft Green)	2588.3 Sqm.
15.	Road & open area	2252.19 Sqm.
16.	Rain Water Harvesting Pits (with size)	6 Nos. (9.42 Cumec)
17.	STP Capacity	122 KLD
18.	Maximum Height of the Building (m)	Approx. 46.50 m
19.	Power Requirement	1350 KW
20.	Power Backup	3 DGs of (1×125), (1×200) (1×300) KVA
21.	Total Water Requirement	~136 KLD

Sr. No.	Particulars	
22.	Fresh/Domestic Water Requirement	~89 KLD
23.	Reuse of Recycled Water	~47 KLD
24.	Waste Water Generated	~110 KLD
25.	Solid Waste Generated (Operational)	~580 Kg/day
26.	Biodegradable Waste (Operational)	~232 Kg/day
27.	Non-Biodegradable Waste (Operational)	~348 Kg/day
28.	Number of Tower	03 (Tower I, II & EWS Tower-III)
29.	Stories	S+13
30.	Total Cost of the project:	95 Crores
31.	EMP Budget	During Construction: Capital: 32 Lakhs Recurring: 16 Lakhs Operational Cost: Capital: 206 Lakhs Recurring: 15.5 Lakhs
32.	Construction Phase:	iii) Water Requirement & Source Fresh water – 9 KLD Treated wastewater-12 KLD Source: Tanker water supply

Land Details :

Khata no.	Plot no.
188	2846, 2847 & 2848
88	2849 & 2850
34	2267 (P) & 2843
158	2252 & 2253

Details of Site Surroundings and Connectivity

S. No.	Description		Distance and Direction
12.	Nearest Junction Nearest Railway Stations	Ranchi Junction Railway Station Argora Railway station Hatia Railway Station	Approx. 4.22 Km towards East Approx. 2.10 Km towards ESE Approx. 4.40 Km towards SSE
13.	Nearest Airport	Birsa Munda Airport, Ranchi	Approx. 4.57 km towards SE
14.	Nearest Village	Argora Gumla Patel Nagar	Approx. 0.18 Km towards ENE Approx. 0.97 Km towards East Approx. 0.41 Km towards SW
15.	Nearest Highway/Roads	Pundag Road Simdega Gumla Ranchi Road Bypass road	Adjacent to site towards North Approx. 0.08 Km towards North Approx. 0.44 Km towards East

16.	Nearest School & College	Govt. Middle School, Ashok Kunj, Kadru Govt. Blind School, Harmu, Ranchi Hinoo United Govt. High School Doranda College Niramala College	Approx. 1.79 Km towards East Approx. 0.90 Km towards NNE Approx. 3.50 Km towards SE Approx. 2.74 Km towards SE Approx. 2.47 Km towards ESE
17.	Nearest Hospital	City Hospital, Ranchi Urban Primary Health Center, Krishna Nagar, Harmu Doranda State Hospital	Approx. 1.79 Km towards ESE Approx. 1.75 Km towards NNE Approx. 2.72 Km towards ESE
18.	Places of worship	Durga Mandir, Doranda Shiv Temple, Argora St. Francis Church	Approx. 0.07 Km towards NNE Approx. 0.70 Km towards East Approx. 0.89 Km towards NE
19.	Water Bodies	Subarnarekha River Potpoto River Dhurwa Dam Kanke Lake Ranchi Lake	Approx. 1.56 Km towards South Approx. 8.06 Km towards North Approx. 6.42 Km towards SW Approx. 5.02 Km towards NNE Approx. 3.00 Km towards ENE
20.	Nearest Town	Ranchi	Approx. 1.45 Km towards East
21.	Protected Forest/ Zoo	Protected Forest, Piska	Approx. 9.96 Km towards ENE

Details of Building Blocks

Block	4 BHK	3 BHK	2 BHK	1BHK	Total No. of units	Population	No. of Floors	Height of the Building
Tower- I	48	--	--	--	48	336	S+13	Max 46.50 meter
Tower- II	--	96	--	--	96	576	S+13	Max 46.50 meter
Tower-III (EWS/LIG)	--	--	12	72	84	348	S+13	Max 46.50 meter
Total					228	1260		

Calculation of Population

Block	Total Dwelling Units	Population
Residential Block	228	1260
Visitors	10% of Residential Population	126
Total		1386

Parking Details

Details	No.
Parking Required for residential (Car)	184

No of Parking Provided for residential (Car)	251
Visitors parking required (Car)	16
Visitors Parking Provided (Car)	21
Total number of parking required (Cars)	200
Total number of parking Provided (Cars)	272
EV charging station @10% of parking	25
Two-wheeler Parking required	210
Two-wheeler Parking Provided	222
EV charging station @10% of parking	22

Calculation of Greenbelt

Total Plot Area	9663 Sqm
Landscape area provided @ ~26.78 % (16.78 % Hard green + 10 % Soft Green) of Plot Area	2588.3 Sqm
Total No. of Trees will be Planted @ 1 tree per 80 Sqm. of Plot Area	120.78 Say 121 Nos.

Details of Water Requirement

S. No.	Description	No. of units / Area in Sqm	Unit Population/ Per flat Population	Total Population	Per water consumption (lpcd)	Unit Total water required (kld)	Fresh water required (kld)	Flushing (kld)	Total Wastewater (kld) (80% of domestic +100% Total flushing)
1	Main Dwelling Units	228	4/5/6/7	1260	100 (70+30)	126	88.2	37.80	108
2	Visitors (10% of the residential population)	---	---	126	15 (10+5)	1.89	1.26	0.63	1.64
	Subtotal -I					128	89	38.43	110
	STP requirement 20% extra than waste water generated					132			
	Treated water generation @80% of waste water					88			
	Reuse of treated water								
	Flushing	---	---	---	---	39			
	Horticulture	2588.3	3 liter/sqm of Landscape area	---		8			
	Sub Total -II					136			

Energy Conservation Measures

S. No.	Net Energy saved (weighted Average Calculation)	
1.	Solar Based lighting will be done in the common areas, Signages, entry gates and boundary walls etc. @ 5%	67.5 KVA
2.	LED Based lighting will be done in the dwelling units	15.63 KVA

3.	Usage of energy efficient Lift (VVVF non gear lifts)	36 KVA
	Total Energy saved	127.13 KVA (9.5%)
	Total Energy consumption	1350 KW
	Energy saving in Residence Envelope Transmittance Value (RETV)	5 %
	Total Energy saving	14.5%

Statutory Clearances :

1	Land Docs	:	M/s Jayasri developer & Builders has entered in to development agreement with the lend owners.
2	DFO Forest Distance	:	DFO, Ranchi Forest Division vide letter no. 2303, dated 05.07.2024 certified that the distance of reserved / protected forest is more than 250 meters from project site.
3	DFO wildlife	:	DFO, Wildlife Division, Ranchi vide letter no. 605, dated 08.07.2024 certified that proposed project site is out side Eco Sensitive Zone of Palkot Wildlife Sanctuary.
4	CO certificate	:	The CO, Argora, Ranchi vide letter no. 681(ii), dated 26.06.2024 has mentioned the plot no. of the project is not recorded as "Jangle Jhari" in R.S. Khatyan & Register II.
5	AAI NOC	:	Airport authority of India issued NOC vide NOC ID no. RANC /EAST /B/ 072022/684492, dated 28.09.2022.
6	Building Plan	:	Conceptual Plan submitted.
7	Fire Department	:	A Fire Advisory has been issued by Fire Department, Jharkhand, Ranchi, vide memo no. 9148/Tech./2022, dated 21.07.2022.

Environment Management Plan: Construction Phase

Sr. No.	Component	Particulars	Capital Investment (Lakhs)	Recurring Expenditure per Annum (Lakhs)
1.	Air	Anti-Smog Gun	6.0	3
2.	Water	Mobile Toilets, etc.	3.0	1.5
3.	Solid and C&D Waste and its Management	Stack yard and its management	3.0	2.5
4.	Occupational Health & Safety	Health medical checkup of workers, PPEs for Workers	5	3.0
5.	Environment Monitoring & Management	Environment Monitoring as per monitoring plan 1. Green Curtain on under construction building 2. Wind breaking wall of 3-meter height	10.0	3.0

6.	Green Belt	Development and maintenance of green belt	5.0	3.0
Total (Rs.)			32	16

Environment Management Plan: Operation Phase:

Sr. No.	Component	Particulars	Capital Investment (Lakhs)	Recurring Expenditure per Annum (Lakhs)
1	Air	Stack emission control	4.0	0.5
2	Water	Sewage Treatment Plant (STP)	60.0	5.0
3	Rain Water Harvesting	Installation of RWH System & Annual Cleaning of RWH tank	10.0	1.0
4	Solid waste Area and its Management	Purchase of Containers for Storage of Waste and installation of OWC	17.0	1.0
5	Fire safety	Emergency Preparedness, Fire hydrant systems, fire extinguishers, emergency control room, etc	95.0	2.0
6	Environment Monitoring & Management	Environment Monitoring as per monitoring plan	0.0	2.0
7	Green Belt	Development and maintenance of green belt	5.0	2.0
8	Others	Energy saving devices, miscellaneous	15.0	2.0
Total (Rs.)			206	15.5

Monitoring Plan

Environmental monitoring will take place in every six months or as per CTE/CTO during Construction and operations phase.

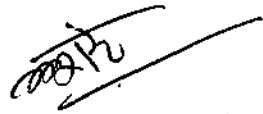
Undertaking affirming that :

- Ground water will be used only after receiving NOC from authorized body
- If any tree cutting will required on the site, proper NOC will be received from the authorized body
- No construction work started before EC
- 136 Kld of waste water will be used in operation phase and 100% of the waste water will be treated out of which 88 kld treated water will be reused for flushing, irrigation, DG cooling etc.
- 1350 Kva of power will be required during operation of the building.

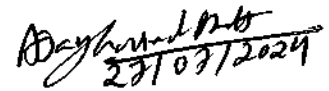
Based on the presentation made and information provided, the Committee decided that the proposal for Proposed Residential Building Project "Green City" of M/s Jaysri Developers & Builders, Village : Argora, Thana : Argora, Thana no.: 207, Distt. : Ranchi, Jharkhand is recommended for grant of EC. The various conditions for grant of EC is enclosed as Annexure -I alongwith the following specific conditions :

- I. In compliance of OM no.F.No. IA3-22/3/2024-IA.III (E-241594) dated 24.07.2024 of MoEF&CC, Govt. of India plantation of saplings shall be carried out in the earmarked green belt area as the part of tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (<https://merilife.nic.in>).
- II. Ground water to be drawn for use in the project only after obtaining permission from the Competent Authority.
- III. Environment management system including organization structure to be drawn to ensure compliance of EC conditions stipulated based on principles of Continual Improvement and periodical management review.
- IV. All raw material to be stored only under covered shed.
- V. PAs to offset (upto20%) consumption of conventional energy sources by promoting use of solar energy, passive energy utilization, optimum fenestration, shading effect and heat islands.
- VI. Developers to promote energy conservation measures such that it offsets not less than 02 % of connected load. It is to be achieved by solar panels etc meeting ECBC norms.
- VII. Trees should be developed & maintained not less than 15% of project area.
- VIII. Organic Waste Converter (OWC) to be installed of sufficient capacity such that all organic waste (bio degradable) generated is composted at source only.
- IX. Developers/Company to install STP of sufficient capacity such that all the sewer produced is treated and reused.
- X. Developers/Company to install Rain water harvesting structures such that all the roof top water runoff is collected and harvested including reuse on 100% basis.
- XI. Developers/Company to conduct and submit carbon footprint and carbon sequestration study report including mitigation measures as a part of EC compliance.
- XII. Water runoff originating from open non constructed areas of project premises to be harvested /guided in such a way that it does not create water logging condition outside.
- XIII. Sufficient number of EV fast charging points to be installed.
- XIV. MSW Collection centre should be located in isolated and preferably unmanned area. Movement of the vehicle carrying waste should be under tarpaulin covered condition only. Route of vehicle should be such that it avoids residential areas as far as practical.
- XV. ISO 14k EMS system standard to be followed for implementation of EMPs with MRM in place for feedback to Sr management.
- XVI. A cycling tract to be provided in residential complex so as to save on fuel and make in campus movement environment friendly.

The meeting concluded with thanks to all present.



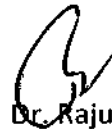
Ashok Kumar Dubey, IFS (Retd.)
Member


27/07/2024

Dr. Ajay Govind Bhatt
Member



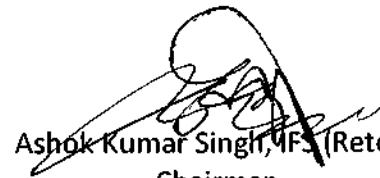
Niranjana Lal Agarwalla
Member



Dr. Raju Kumar
Member


27/07/2024

Srikant Verma, IFS
Member Secretary


27/07/2024

Ashok Kumar Singh, IFS (Retd.)
Chairman

I. Statutory Compliance

- i. The project proponent shall obtain all necessary clearance/ permission from all relevant agencies including town planning authority before commencement of work. All the construction shall be done in accordance with the local building byelaws.
- ii. The approval of the Competent Authority shall be obtained for structural safety of buildings due to earthquakes, adequacy of fire fighting equipment etc as per National Building Code including protection measures from lightening etc.
- iii. The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1980, in case of the diversion of forest land for non-forest purpose involved in the project.
- iv. In the writ petition (Civil) no. 202/1995, T.N. Godaverman Thirumulpad vs union of India and ors. the Hon'ble Supreme Court passed an order dated 03.06.2022 " National Park or Wildlife Sanctuary must have an ESZ of minimum 01 km in which the activities prescribed and prescribed in the guidelines of 09th February, 2011 shall be strictly adhered to ".
- v. The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.
- vi. The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State Pollution Control Board/ Committee.
- vii. The project proponent shall obtain the necessary permission for drawl of ground water / surface water required for the project from the competent authority.
- viii. A certificate of adequacy of available power from the agency supplying power to the project along with the load allowed for the project should be obtained.
- ix. All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department shall be obtained, as applicable, by project proponents from the respective competent authorities.
- x. The provisions of the Solid Waste (Management) Rules, 2016, e-Waste (Management) Rules, 2016, and the Plastics Waste (Management) Rules, 2016 shall be followed.
- xi. The project proponent shall follow the ECBC/ECBC-R prescribed by Bureau of Energy Efficiency, Ministry of Power strictly.
- xii. Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel (kerosene/gas) for cooking,

safe drinking water, medical health care, etc. The housing may be in the form of temporary structures to be removed after completion of the project.

- xiii. Provision of drinking water, waste water disposal, solid wastes management and primary health facilities shall be ensured for labour force. Proper sanitation facilities shall be provided at the construction site to prevent health related problems. Domestic as well as sanitary wastes from construction camps shall be cleared regularly.
- xiv. All the labourers to be engaged for construction works shall be screened for health and adequately treated before issue of work permits. The contractor shall ensure periodic health check-up of construction workers.
- xv. All vehicles/equipment deployed during construction phase shall be ensured in good working condition and shall conform to applicable air and noise emission standards. These shall be operated only during non-peak hours.
- xvi. Accumulation/stagnation of water shall be avoided ensuring vector control.
- xvii. Water during construction phase should be preferred from Municipal supply.
- xviii. Unskilled construction labourers shall be recruited from the local areas.
- xix. Monitoring of ground water table and quality once in three months shall be carried out. Construction of tube wells, bore wells shall be strictly regulated.
- xx. Adequate provision shall be made to cater the parking needs. Parking spaces standards as given in "Manual on Norms and Standards for Environmental Clearance of Large Construction Projects" issued by Ministry of Environment and Forests, Government of India shall be adopted.
- xxi. Rest room facilities shall be provided for service population.
- xxii. Water body falling within premises (if any) shall not be lined or no embankment shall be cemented. The water bodies, if any, shall be kept in natural conditions without disturbing the ecological habitat.
- xxiii. Construction shall conform to the requirements of local seismic regulations. The project proponent shall obtain permission for the plans and designs including structural design, standards and specifications of all construction work from concerned authority.

II. Air quality monitoring and preservation

- i. Notification GSR 94(E) dated 25.01.2018 of MoEF&CC regarding Mandatory Implementation of Dust Mitigation Measures for Construction and Demolition Activities for projects requiring Environmental Clearance shall be complied with.
- ii. A management plan shall be drawn up and implemented to contain the current exceedance in ambient air quality at the site.

- iii. The project proponent shall install system to carryout Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g. PM10 and PM25) covering upwind and downwind directions during the construction period.
- iv. Diesel power generating sets proposed as source of backup power should be of enclosed type and conform to rules made under the Environment (Protection) Act, 1986. The height of stack of DG sets should be equal to the height needed for the combined capacity of all proposed DG sets. Use of low sulphur diesel. The location of the DG sets may be decided with in consultation with State Pollution Control Board.
- v. Construction site shall be adequately barricaded before the construction begins. Dust, smoke & other air pollution prevention measures shall be provided for the building as well as the site. These measures shall include screens for the building under construction, continuous dust/ wind breaking walls all around the site (at least 3 meter height). Plastic/tarpaulin sheet covers shall be provided for vehicles bringing in sand, cement, murram and other construction materials prone to causing dust pollution at the site as well as taking out debris from the site.
- vi. Sand, murram, loose soil, cement, stored on site shall be covered adequately so as to prevent dust pollution.
- vii. Wet jet shall be provided for grinding and stone cutting.
- viii. Unpaved surfaces and loose soil shall be adequately sprinkled with water to suppress dust.
- ix. All construction and demolition debris shall be stored at the site (and not dumped on the roads or open spaces outside) before they are properly disposed. All demolition and construction waste shall be managed as per the provisions of the Construction and Demolition Waste Rules 2016.
- x. The diesel generator sets to be used during construction phase shall be low sulphur diesel type and shall conform to Environmental (Protection) prescribed for air and noise emission standards.
- xi. The gaseous emissions from DG set shall be dispersed through adequate stack height as per CPCB standards. Acoustic enclosure shall be provided to the DG sets to mitigate the noise pollution. Low sulphur diesel shall be used. The location of the DG set and exhaust pipe height shall be as per the provisions of the Central Pollution Control Board (CPCB) norms.
- xii. For indoor air quality the ventilation provisions as per National Building Code of India.

III. Water quality monitoring and preservation

- i. The natural drain system should be maintained for ensuring unrestricted flow of water. No construction shall be allowed to obstruct the natural drainage through the site, on wetland and water bodies. Check dams, bio-swales, landscape, and

other sustainable urban drainage systems (SUDS) are allowed for maintaining the drainage pattern and to harvest rain water.

- ii. Buildings shall be designed to follow the natural topography as much as possible. Minimum cutting and filling should be done.
- iii. Total fresh water use shall not exceed the proposed requirement as provided in the project details.
- iv. The quantity of fresh water usage, water recycling and rainwater harvesting shall be measured and recorded to monitor the water balance as projected by the project proponent. The record shall be submitted to the Regional Office, MoEF&CC along with six monthly Monitoring reports.
- v. A certificate shall be obtained from the local body supplying water, specifying the total annual water availability with the local authority, the quantity of water already committed, the quantity of water allotted to the project under consideration and the balance water available. This should be specified separately for ground water and surface water sources, ensuring that there is no impact on other users.
- vi. At least 20% of the open spaces as required by the local building bye-laws shall be pervious. Use of Grass pavers, paver blocks with at least 50% opening, landscape etc. would be considered as pervious surface.
- vii. Installation of dual pipe plumbing for supplying fresh water for drinking, cooking and bathing etc and other for supply of recycled water for flushing, landscape irrigation, car washing, thermal cooling, conditioning etc. shall be done.
- viii. Use of water saving devices/ fixtures (viz. low flow flushing systems; use of low flow faucets tap aerators etc) for water conservation shall be incorporated in the building plan.
- ix. Separation of grey and black water should be done by the use of dual plumbing system. In case of single stack system separate recirculation lines for flushing by giving dual plumbing system be done.
- x. Water demand during construction should be reduced by use of pre-mixed concrete, curing agents and other best practices referred.
- xi. The local bye-law provisions on rain water harvesting should be followed. If local byelaw provision is not available, adequate provision for storage and recharge should be followed as per the Ministry of Urban Development Model Building Byelaws, 2016. Rain water harvesting recharge pits/storage tanks shall be provided for ground water recharging as per the CGWB norms.
- xii. A rain water harvesting plan needs to be designed where the recharge bores of minimum one recharge bore per 5,000 square meters of built up area and storage capacity of minimum one day of total fresh water requirement shall be provided. In areas where ground water recharge is not feasible, the rain water should be

harvested and stored for reuse. The ground water shall not be withdrawn without approval from the Competent Authority.

- xiii. All recharge should be limited to shallow aquifer.
- xiv. No ground water shall be used during construction phase of the project.
- xv. Any ground water dewatering should be properly managed and shall conform to the approvals and the guidelines of the CGWA in the matter. Formal approval shall be taken from the CGWA for any ground water abstraction or dewatering.
- xvi. The quantity of fresh water usage, water recycling and rainwater harvesting shall be measured and recorded to monitor the water balance as projected by the project proponent. The record shall be submitted to the Regional Office, MoEF&CC along with six monthly Monitoring reports.
- xvii. Sewage shall be treated in the STP with tertiary treatment. The treated effluent from STP shall be recycled/re used for flushing, AC make up water and gardening. As proposed, no treated water shall be disposed in to municipal drain.
- xviii. No sewage or untreated effluent water would be discharged through storm water drains.
- xix. Onsite sewage treatment of capacity of treating 100% waste water to be installed based on the MBBR/MBR/SBR technology. The installation of the Sewage Treatment Plant (STP) shall be certified by an independent expert and a report in this regard shall be submitted to the Ministry before the project is commissioned for operation. Treated waste water shall be reused on site for landscape, flushing, cooling tower, and other end-uses. Excess treated water shall be discharged as per statutory norms notified by Ministry of Environment, Forest and Climate Change. Natural treatment systems shall be promoted.
- xx. Periodical monitoring of water quality of treated sewage shall be conducted. Necessary measures should be made to mitigate the odour problem from STP.
- xxi. Sludge from the onsite sewage treatment, including septic tanks, shall be collected, conveyed and disposed as per the Ministry of Urban Development, Central Public Health and Environmental Engineering Organization (CPHEEO) Manual on Sewerage and Sewage Treatment Systems, 2013.

IV. Noise monitoring and prevention

- i. Ambient noise levels shall conform to residential area/commercial area/industrial area/silence zone both during day and night as per Noise Pollution (Control and Regulation) Rules, 2000. Incremental pollution loads on the ambient air and noise quality shall be closely monitored during construction phase. Adequate measures shall be made to reduce ambient air and noise level during construction phase, so as to conform to the stipulated standards by CPCB / SPCB.

- ii. Noise level survey shall be carried as per the prescribed guidelines and report in this regard shall be submitted to Regional Officer of the Ministry as a part of six-monthly compliance report.
- iii. Acoustic enclosures for DG sets, noise barriers for ground-run bays, ear plugs for operating personnel shall be implemented as mitigation measures for noise impact due to ground sources.

V. Energy Conservation measures

- i. Compliance with the Energy Conservation Building Code (ECBC) of Bureau of Energy Efficiency shall be ensured. Buildings in the States which have notified their own ECBC, shall comply with the State ECBC.
- ii. Outdoor and common area lighting shall be LED.
- iii. Concept of passive solar design that minimize energy consumption in buildings by using design elements, such as building orientation, landscaping, efficient building envelope, appropriate fenestration, increased day lighting design and thermal mass etc. shall be incorporated in the building design. Wall, window, and roof u-values shall be as per ECBC specifications.
- iv. Energy conservation measures like installation of CFLs/ LED for the lighting the area outside the building should be integral part of the project design and should be in place before project commissioning.
- v. Solar, wind or other Renewable Energy shall be installed to meet electricity generation equivalent to 1% of the demand load or as per the state level/ local building bye-laws requirement, whichever is higher.
- vi. Solar power shall be used for lighting in the apartment to reduce the power load on grid. Separate electric meter shall be installed for solar power. Solar water heating shall be provided to meet 20% of the hot water demand of the commercial and institutional building or as per the requirement of the local building bye-laws, whichever is higher. Residential buildings are also recommended to meet its hot water demand from solar water heaters, as far as possible.

VI. Waste Management

- i. A certificate from the competent authority handling municipal solid wastes, indicating the existing civic capacities of handling and their adequacy to cater to the M.S.W. generated from project shall be obtained.
- ii. Disposal of muck during construction phase shall not create any adverse effect on the neighboring communities and be disposed taking the necessary precautions for general safety and health aspects of people, only in approved sites with the approval of competent authority.

- iii. Separate wet and dry bins must be provided in each unit and at the ground level for facilitating segregation of waste. Solid waste shall be segregated into wet garbage and inert materials.
- iv. Organic waste compost/ Vermiculture pit/ Organic Waste Converter within the premises with a minimum capacity of 0.3 kg /person/day must be installed.
- v. All non-biodegradable waste shall be handed over to authorized recyclers for which a written tie up must be done with the authorized recyclers.
- vi. Any hazardous waste generated during construction phase, shall be disposed off as per applicable rules and norms with necessary approvals of the State Pollution Control Board.
- vii. Use of environment friendly materials in bricks, blocks and other construction materials, shall be required for at least 20% of the construction material quantity. These include Fly Ash bricks, hollow bricks, AACs, Fly Ash Lime Gypsum blocks, Compressed earth blocks, and other environment friendly materials.
- viii. Fly ash should be used as building material in the construction as per the provision of Fly Ash Notification of September, 1999 and amended as on 27th August, 2003 and 25th January, 2016. Ready mixed concrete must be used in building construction.
- ix. Any wastes from construction and demolition activities related thereto shall be managed so as to strictly conform to the Construction and Demolition Rules, 2016.
- x. Used CFLs and TFLs should be properly collected and disposed off/sent for recycling as per the prevailing guidelines/ rules of the regulatory authority to avoid mercury contamination.

VII. Green Cover

- i. No tree can be felled/transplant unless exigencies demand. Where absolutely necessary, tree felling shall be with prior permission from the concerned regulatory authority. Old trees should be retained based on girth and age regulations as may be prescribed by the Forest Department. Plantations to be ensured species (cut) to species (planted).
- ii. A minimum of 1 tree for every 80 sqm of land should be planted and maintained. The existing trees will be counted for this purpose. The landscape planning should include plantation of native species. The species with heavy foliage, broad leaves and wide canopy cover are desirable. Water intensive and/or invasive species should not be used for landscaping.
- iii. Where the trees need to be cut with prior permission from the concerned local Authority, compensatory plantation in the ratio of 1:10 (i.e. planting of 10 trees for every 1 tree that is cut) shall be done and maintained. Plantations to be ensured species (cut) to species (planted). Area for green belt development shall be provided as per the details provided in the project document.

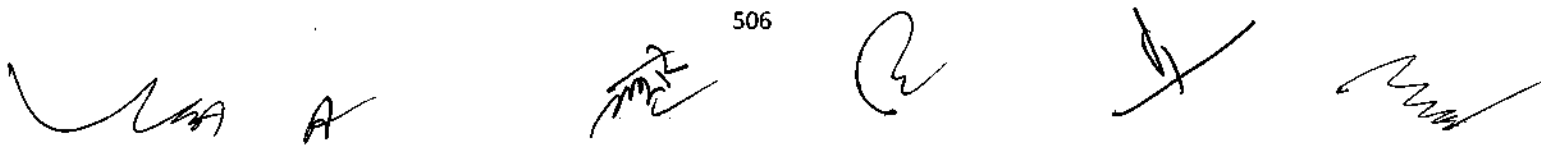
- iv. Topsoil should be stripped to a depth of 20 cm from the areas proposed for buildings, roads, paved areas, and external services. It should be stockpiled appropriately in designated areas and reapplied during plantation of the proposed vegetation on site.

VIII. Transport

- i. A comprehensive mobility plan, as per MoUD best practices guidelines (URDPFI), shall be prepared to include motorized, non-motorized, public, and private networks. Road should be designed with due consideration for environment, and safety of users. The road system can be designed with these basic criteria.
 - a. Hierarchy of roads with proper segregation of vehicular and pedestrian traffic.
 - b. Traffic calming measures.
 - c. Proper design of entry and exit points.
 - d. Parking norms as per local regulation
- ii. Vehicles hired for bringing construction material to the site should be in good condition and should have a pollution check certificate and should conform to applicable air and noise emission standards be operated only during non-peak hours.
- iii. A detailed traffic management and traffic decongestion plan shall be drawn up to ensure that the current level of service of the roads within a 05 kms radius of the project is maintained and improved upon after the implementation of the project. This plan should be based on cumulative impact of all development and increased habitation being carried out or proposed to be carried out by the project or other agencies in this 05 Kms radius of the site in different scenarios of space and time and the traffic management plan shall be duly validated and certified by the State Urban Development department and the P.W.D./ competent authority for road augmentation and shall also have their consent to the implementation of components of the plan which involve the participation of these departments.

IX. Human Health Issues

- i. All workers working at the construction site and involved in loading, unloading, carriage of construction material and construction debris or working in any area with dust pollution shall be provided with dust mask.
- ii. For indoor air quality the ventilation provisions as per National Building Code of India.
- iii. Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.
- iv. Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may

The bottom of the page features several handwritten signatures and initials in black ink. From left to right, there is a large, stylized signature, a smaller signature with the letter 'A' below it, a signature that appears to be 'MTC', a circular mark or signature, a signature with a long horizontal stroke, and a final signature on the far right.

- be in the form of temporary structures to be removed after the completion of the project.
- v. Occupational health surveillance of the workers shall be done on a regular basis.
 - vi. A First Aid Room shall be provided in the project both during construction and operations of the project.

X. Corporate Environment Responsibility

- i. The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No. 22-65/2017-IA.III dated 1st May 2018, as applicable, regarding Corporate Environment Responsibility.
- ii. The company shall have a well laid down environmental policy duly approved by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest / wildlife norms / conditions. The company shall have defined system of reporting infringements / deviation / violation of the environmental / forest / wildlife norms / conditions and / or shareholders / stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.
- iii. A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.
- iv. Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.

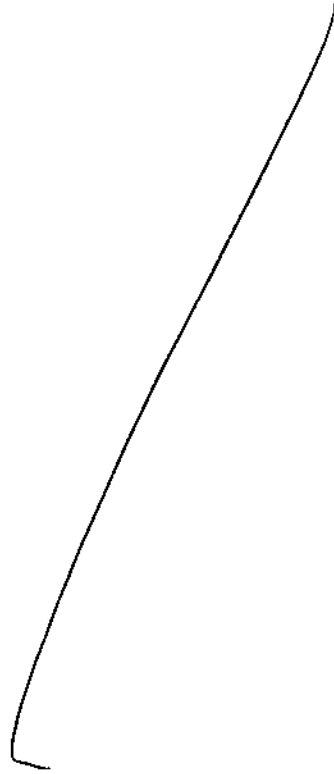
XI. Miscellaneous

- i. The project proponent shall prominently advertise it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days indicating that the project has been accorded environment clearance and the details of MoEF&CC/SEIAA website where it is displayed.
- ii. The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.

- iii. The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.
- iv. The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
- v. The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.
- vi. The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.
- vii. The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
- viii. The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.
- ix. No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).
- x. Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.
- xi. The Ministry / SEIAA / SEAC may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
- xii. The Ministry / SEIAA / SEAC reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
- xiii. It shall be mandatory for the project management to submit six (06) monthly compliance report in respect of the stipulated prior environmental clearance terms and conditions in hard copies and soft copies to the regulatory authority concerned Regional Office of MoEF & CC at Ranchi and Jharkhand State Pollution Control Board (J.S.P.C.B.), Ranchi / CPCB / SEIAA.
- xiv. The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and

Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.

- xv. Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under section 16 of the National Green Tribunal Act, 2010.
- xvi. The Prescribed EC is valid as per Notification no. S.O. 1807(E) dated 12.04.2022 of MoEF&CC, Govt. of India.



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I. Statutory compliance

- i. This Environmental Clearance (EC) is subject to orders/ judgment of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, Common Cause Conditions as may be applicable.
- ii. In the writ petition (Civil) no. 202/1995, T.N. GodavermanThirumulpadvs union of India and ors. theHon'ble Supreme Court passed an order dated 03.06.2022 " National Park or Wildlife Sanctuary must have an ESZ of minimum 01 km in which the activities prescribed and prescribed in the guidelines of 09th February, 2011 shall be strictly adhered to ".
- iii. The Project proponent complies with all the statutory requirements and judgement of Hon'ble Supreme Court dated 2nd August,2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India &Ors before commencing the mining operations.
- iv. The Hon'ble Supreme Court vide order dated 08.01.2020 in W.P. (Civil) No.114/2014 in the matter of Common Cause vs. Union of India has directed that the area which has been mined should be restored so that grass and other vegetation including trees can grow in the mining area for the benefit of animals.

"The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.

- v. The State Government concerned shall ensure that mining operation shall not be commenced till the entire compensation levied, if any, for illegal mining paid by the Project Proponent through their respective Department of Mining & Geology in strict compliance of Judgement of Hon'ble Supreme Court dated 2nd August, 2017 in Writ Petition (Civil) No. 114 of 2014 in matter of Common Cause versus Union of India &Ors.
- vi. This Environmental Clearance shall become operational only after receiving formal NBWL Clearance from MoEF&CC subsequent to the recommendations of the Standing Committee of National Board for Wildlife, if applicable to the Project.
- vii. This Environmental Clearance shall become operational only after receiving formal Forest Clearance (FC) under the provision of Forest Conservation Act, 1980, if applicable to the Project.
- viii. Project Proponent (PP) shall obtain Consent to Operate after grant of EC and effectively implement all the conditions stipulated therein. The mining activity shall not commence prior to obtaining Consent to Establish / Consent to Operate from the concerned State Pollution Control Board/Committee.
- ix. The PP shall adhere to the provision of the Mines Act, 1952, Mines and Mineral (Development & Regulation), Act, 2015 and rules & regulations made there under. PP shall adhere to various circulars issued by Directorate General Mines Safety (DGMS) and Indian Bureau of Mines from time to time.

- x. The Project Proponent shall obtain consents from all the concerned land owners, before start of mining operations, as per the provisions of MMDR Act, 1957 and rules made there under in respect of lands which are not owned by it.
- xi. The Project Proponent shall follow the mitigation measures provided in MoEF&CC's Office Memorandum No. Z-11013/57/2014-IAI (M), dated 29th October, 2014, titled "Impact of mining activities on Habitations-Issues related to the mining Projects wherein Habitations and villages are the part of mine lease areas or Habitations and villages are surrounded by the mine lease area".
- xii. The Project Proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of surface water and from CGWA for withdrawal of ground water for the project.
- xiii. A copy of EC letter will be marked to concerned Panchayat / local NGO etc. if any, from whom suggestion / representation has been received while processing the proposal.
- xiv. State Pollution Control Board/Committee shall be responsible for display of this EC letter at its Regional office, District Industries Centre and Collector's office/ Tehsildar's Office for 30 days.
- xv. The Project Authorities should widely advertise about the grant of this EC letter by printing the same in at least two local newspapers, one of which shall be in vernacular language of the concerned area. The advertisement shall be done within 7 days of the issue of the clearance letter mentioning that the instant project has been accorded EC and copy of the EC letter is available with the State Pollution Control Board/Committee and web site of the Ministry of Environment, Forest and Climate Change ([www. Environment clearance.nic.in](http://www.Environmentclearance.nic.in)). A copy of the advertisement may be forwarded to the concerned MoEF& CC Regional Office for compliance and record.
- xvi. The Project Proponent shall inform the MoEF&CC for any change in ownership of the mining lease. In case there is any change in ownership or mining lease is transferred than mining operation shall only be carried out after transfer of EC as per provisions of the para 11 of EIA Notification, 2006 as amended from time to time.

II. Air quality monitoring and preservation

- i. The Project Proponent shall install a minimum of 3 (three) online Ambient Air Quality Monitoring Stations with 1 (one) in upwind and 2 (two) in downwind direction based on long term climatological data about wind direction such that an angle of 120° is made between the monitoring locations to monitor critical parameters, relevant for mining operations, of air pollution viz. PM10, PM2.5, NO2; CO and SO2 etc. as per the methodology mentioned in NAAQS Notification No. B-29016/20/90/PCUI, dated 18.11.2009 covering the aspects of transportation and use of heavy machinery in the impact zone. The ambient air quality shall also be monitored at prominent places like office building, canteen etc. as per the site condition to ascertain the exposure characteristics at specific places. The above

data shall be digitally displayed within 03 months in front of the main Gate of the mine site.

- ii. Effective safeguard measures for prevention of dust generation and subsequent suppression (like regular water sprinkling, metalled road construction etc.) shall be carried out in areas prone to air pollution wherein high levels of PM10 and PM2.5 are evident such as haul road, loading and unloading point and transfer points. The Fugitive dust emissions from all sources shall be regularly controlled by installation of required equipments/ machineries and preventive maintenance: Use of suitable water-soluble chemical dust suppressing agents may be explored for better effectiveness of dust control system. It shall be ensured that air pollution level conform to the standards prescribed by the MoEF&CC/ Central Pollution Control Board.

III. Water quality monitoring and preservation

- i. In case, immediate mining scheme envisages intersection of ground water table, then Environmental Clearance shall become operational only after receiving formal clearance from CGWA. In case, mining operation involves intersection of ground water table at a later stage, then PP shall ensure that prior approval from CGWA and MoEF&CC is in place before such mining operations. The permission for intersection of ground water table shall essentially be based on detailed hydro-geological study of the area.
- ii. Regular monitoring of the flow rate of the springs and perennial nallahs flowing in and around the mine lease shall be carried out and records maintain. The natural water bodies and or streams which are flowing in an around the village, should not be disturbed. The Water Table should be nurtured so as not to go down below the pre-mining period. In case of any water scarcity in the area, the Project Proponent has to provide water to the villagers for their use. A provision for regular monitoring of water table in open dug well located in village should be incorporated to ascertain the impact of mining over ground water table. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.
- iii. Project Proponent shall regularly monitor and maintain records w.r.t. ground water level and quality in and around the mine lease by establishing a network of existing wells as well as new piezo-meter installations during the mining operation in consultation with Central Ground Water Authority/ State Ground Water Department. The Report on changes in Ground water level and quality shall be submitted on six-monthly basis to the Regional Office of the Ministry, CGWA and State Groundwater Department / State Pollution Control Board.
- iv. The Project Proponent shall undertake regular monitoring of natural water course/ water resources/ springs and perennial nallahs existing/ flowing in and around the mine lease and maintain its records. The project proponent shall undertake regular monitoring of water quality upstream and downstream of

water bodies passing within and nearby/ adjacent to the mine lease and maintain its records. Sufficient number of gullies shall be provided at appropriate places within the lease for management of water. PP shall carryout regular monitoring w.r.t. pH and included the same in monitoring plan. The parameters to be monitored shall include their water quality vis-à-vis suitability for usage as per CPCB criteria and flow rate. It shall be ensured that no obstruction and/ or alteration be made to water bodies during mining operations without justification and prior approval of MoEF&CC. The monitoring of water courses/ bodies existing in lease area shall be carried out four times in a year viz. pre- monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January) and the record of monitored data may be sent regularly to Ministry of Environment, Forest and Climate Change and its Regional Office, Central Ground Water Authority and Regional Director, Central Ground Water Board, State Pollution Control Board and Central Pollution Control Board. Clearly showing the trend analysis on six-monthly basis.

- v. Quality of polluted water generated from mining operations which include Chemical Oxygen Demand (COD) in mines run-off; acid mine drainage and metal contamination in runoff shall be monitored along with Total Suspended Solids (TDS), Dissolved Oxygen (DO), pH and Total Suspended Solids (TSS). The monitored data shall be uploaded on the website of the company as well as displayed at the project site in public domain, on a display board, at a suitable location near the main gate of the Company. The circular No. J- 20012/1/2006-IAJ (M) dated 27.05.2009 issued by Ministry of Environment, Forest and Climate Change may also be referred in this regard.
- vi. Project Proponent shall plan, develop and implement rainwater harvesting measures on long term basis to augment ground water resources in the area consultation with Central Ground Water Board/ State Groundwater Department. A report on amount of water recharged needs to be submitted to Regional Office MoEF&CC annually.
- vii. Industrial waste water (workshop and waste water from the mine) should be properly collected and treated so as to conform to the notified standards prescribed from time to time. The standards shall be prescribed through Consent to Operate (CTO) issued by concerned State Pollution Control Board (SPCB). The workshop effluent shall be treated after its initial passage through Oil and grease trap.
- viii. The water balance/water auditing shall be carried out and measure for reducing the consumption of water shall be taken up and reported to the Regional Office of the MoEF&CC and State Pollution Control Board/Committee.

IV. Noise and vibration monitoring and prevention

- i. The peak particle velocity at 500m distance or within the nearest habitation, whichever is closer shall be monitored periodically as per applicable DGMS guidelines.

- ii. The illumination and sound at night at project sites disturb the villages in respect of both human and animal population. Consequent sleeping disorders and stress may affect the health in the villages located close to mining operations. Habitations have a right for darkness and minimal noise levels at night. PPs must ensure that the biological clock of the villages is not disturbed; by orienting the floodlights/ masks away from the villagers and keeping the noise levels well within the prescribed limits for day /night hours.
- iii. The Project Proponent shall take measures for control of noise levels below 85 dBA in the work environment. The workers engaged in operations of HEMM, etc. should be provided with ear plugs /muffs. All personnel including laborers working in dusty areas shall be provided with protective respiratory devices along with adequate training, awareness and information on safety and health aspects. The PP shall be held responsible in case it has been found that workers/ personals/ laborers are working without personal protective equipment.

V. Mining Plan

- i. The Project Proponent shall adhere to the working parameters of mining plan which was submitted at the time of EC appraisal wherein year-wise plan was mentioned for total excavation i.e. quantum of mineral, waste, over burden, inter burden and top soil etc.. No change in basic mining proposal like mining technology, total excavation, mineral & waste production, lease area and scope of working (viz. method of mining, overburden & dump management, O.B & dump mining, mineral transportation mode, ultimate depth of mining etc.) shall not be carried out without prior approval of the Ministry of Environment, Forest and Climate Change, which entail adverse environmental impacts, even if it is a part of approved mining plan modified after grant of EC or granted by State Govt. in the form to Short Term Permit (STP), Query license or any other name.
- ii. The Project Proponent shall get the Final Mine Closure Plan along with Financial Assurance approved from Indian Bureau of Mines/Department of Mining & Geology as required under the Provision of the MMDR Act, 1957 and Rules/ Guidelines made there under. A copy of approved final mine closure plan shall be submitted within 2 months of the approval of the same from the competent authority to the concerned Regional Office of the Ministry of Environment, Forest and Climate Change for record and verification.
- iii. The land-use of the mine lease area at various stages of mining scheme as well as at the end-of-life shall be governed as per the approved Mining Plan. The excavation vis-à-vis backfilling in the mine lease area and corresponding afforestation to be raised in the reclaimed area shall be governed as per approved mining plan. PP shall ensure the monitoring and management of rehabilitated areas until the vegetation becomes self sustaining. The compliance status shall be submitted half-yearly to the MoEF&CC and its concerned Regional Office.

VI. Land reclamation

- i. The Overburden (O.B.) generated during the mining operations shall be stacked at earmarked OB dump site(s) only and it should not be kept active for a long period of time. The physical parameters of the OB dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by D.G.M.S w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of top soil/OB dumps. The topsoil shall be used for land reclamation and plantation.
- ii. The reject/waste generated during the mining operations shall be stacked at earmarked waste dump site(s) only. The physical parameters of the waste dumps like height, width and angle of slope shall be governed as per the approved Mining Plan as per the guidelines/circulars issued by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of waste dumps.
- iii. The reclamation of waste dump sites shall be done in scientific manner as per the Approved Mining Plan cum Progressive Mine Closure Plan.
- iv. The slope of dumps shall be vegetated in scientific manner with suitable native species to maintain the slope stability, prevent erosion and surface run off. The selection of local species regulates local climatic parameters and help in adaptation of plant species to the microclimate. The gullies formed on slopes should be adequately taken care of as it impacts the overall stability of dumps. The dump mass should be consolidated with the help of dozer/ compactors thereby ensuring proper filling/ leveling of dump mass. In critical areas, use of geo textiles/ geo-membranes / clay liners / Bentonite etc. shall be undertaken for stabilization of the dump.
- v. The Project Proponent shall carry out slope stability study in case the dump height is more than 30 meters. The slope stability report shall be submitted to concerned regional office of MoEF&CC.
- vi. Catch drains, settling tanks and ponds of appropriate size shall be constructed around the mine working, mineral yards and Top Soil/OB/Waste dumps to prevent run off of water and flow of sediments directly into the water bodies (Nallah/ River/ Pond etc.). The collected water should be utilized for watering the mine area, roads, green belt development, plantation etc. The drains/ sedimentation sumps etc. shall be de-silted regularly, particularly after monsoon season, and maintained properly.
- vii. Check dams of appropriate size, gradient and length shall be constructed around mine pit and OB dumps to prevent storm run-off and sediment flow into adjoining water bodies. A safety margin of 50% shall be kept for designing of sump structures over and above peak rainfall (based on 50 years data) and maximum discharge in the mine and its adjoining area which shall also help in providing adequate retention time period thereby allowing proper settling of sediments/ silt material. The sedimentation pits/ sumps shall be constructed at the corners of the garland drains.
- viii. The top soil, if any, shall temporarily be stored at earmarked site(s) within the mine lease only and should not be kept unutilized for long. The physical parameters of the top soil dumps like height, width and angle of slope shall be

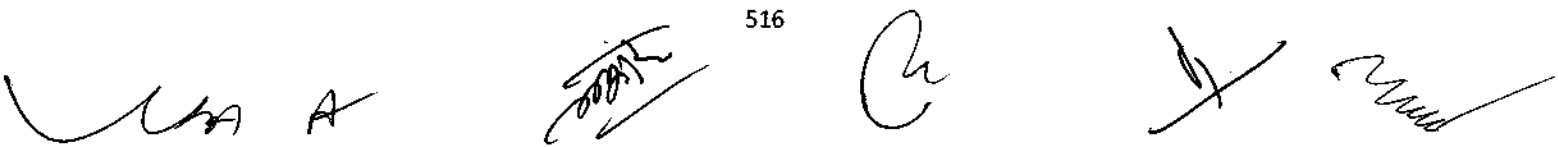
governed as per the approved Mining Plan and as per the guidelines framed by DGMS w.r.t. safety in mining operations shall be strictly adhered to maintain the stability of dumps. The topsoil shall be used for land reclamation and plantation purpose.

VII. Transportation

- i. No Transportation of the minerals shall be allowed in case of roads passing through villages/ habitations. In such cases, PP shall construct a 'bypass' road for the purpose of transportation of the minerals leaving an adequate gap (say at least 200 meters) so that the adverse impact of sound and dust along with chances of accidents could be mitigated. All costs resulting from widening and strengthening of existing public road network shall be borne by the PP in consultation with nodal State Govt. Department. Transportation of minerals through road movement in case of existing village/ rural roads shall be allowed in consultation with nodal State Govt. Department only after required strengthening such that the carrying capacity of roads is increased to handle the traffic load. The pollution due to transportation load on the environment will be effectively controlled and water sprinkling will also be done regularly. Vehicular emissions shall be kept under control and regularly monitored. Project should obtain Pollution Under Control (PUC) certificate for all the vehicles from authorized pollution testing centers.
- ii. The Main haulage road within the mine lease should be provided with a permanent water sprinkling arrangement for dust suppression. Other roads within the mine lease should be wetted regularly with tanker-mounted water sprinkling system. The other areas of dust generation like crushing zone, material transfer points, material yards etc. should invariably be provided with dust suppression arrangements. The air pollution control equipments like bag filters, vacuum suction hoods, dry fogging system etc. shall be installed at Crushers, belt-conveyors and other areas prone to air pollution. The belt conveyor should be fully covered to avoid generation of dust while transportation. PP shall take necessary measures to avoid generation of fugitive dust emissions.

VIII. Green Belt

- i. The Project Proponent shall develop greenbelt in 7.5m wide safety zone all along the mine lease boundary as per the guidelines of CPCB in order to arrest pollution emanating from mining operations within the lease. The whole Green belt shall be developed within first 5 years starting from windward side of the active mining area. The development of greenbelt shall be governed as per the EC granted by the Ministry irrespective of the stipulation made in approved mine plan.
- ii. The Project Proponent shall carryout plantation/ afforestation in backfilled and reclaimed area of mining lease, around water body, along the roadsides, in community areas etc. by planting the native species in consultation with the State Forest Department/ Agriculture Department/ Rural development department/ Tribal Welfare Department/ Gram Panchayat such that only those species be

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selected which are of use to the local people. The CPCB guidelines in this respect shall also be adhered. The density of the trees should be around 2500 saplings per Hectare. Adequate budgetary provision shall be made for protection and care of trees.

- iii. The Project Proponent shall make necessary alternative arrangements for livestock feed by developing grazing land with a view to compensate those areas which are coming within the mine lease. The development of such grazing land shall be done in consultation with the State Government. In this regard, Project Proponent should essentially implement the directions of the Hon'ble Supreme Court with regard to acquisition of grazing land. The sparse trees on such grazing ground, which provide mid-day shelter from the scorching sun, should be scrupulously guarded/ protected against felling and plantation of such trees should be promoted.
- iv. The Project Proponent shall undertake all precautionary measures for conservation and protection of endangered flora and fauna and Schedule-I species during mining operation. A Wildlife Conservation Plan shall be prepared for the same clearly delineating action to be taken for conservation of flora and fauna. The Plan shall be approved by Chief Wild Life Warden of the State Govt.
- v. And implemented in consultation with the State Forest and Wildlife Department. A copy of Wildlife Conservation Plan and its implementation status (annual) shall be submitted to the Regional Office of the Ministry.

IX. Public hearing and human health issues

- i. The Project Proponent shall appoint an Occupational Health Specialist for Regular as well as Periodical medical examination of the workers engaged in the mining activities, as per the DGMS guidelines. The records shall be maintained properly. PP shall also carryout Occupational health check-ups in respect of workers which are having ailments like BP, diabetes, habitual smoking, etc. The check-ups shall be undertaken once in six months and necessary remedial/ preventive measures be taken. A status report on the same may be sent to MoEF&CC Regional Office and DGMS on half-yearly basis.
- ii. The Project Proponent must demonstrate commitment to work towards 'Zero Harm' from their mining activities and carry out Health Risk Assessment (HRA) for identification workplace hazards and assess their potential risks to health and determine appropriate control measures to protect the health and wellbeing of workers and nearby community. The proponent shall maintain accurate and systematic records of the HRA. The HRA for neighborhood has to focus on Public Health Problems like Malaria, Tuberculosis, HIV, Anaemia, Diarrhoea in children under five, respiratory infections due to bio mass cooking. The proponent shall also create awareness and educate the nearby community and workers for Sanitation, Personal Hygiene, Hand washing, not to defecate in open, Women Health and Hygiene (Providing Sanitary Napkins), hazard of tobacco and alcohol use. The Proponent shall carryout base line HRA for all the category of workers and thereafter every five years.

- iii. The Proponent shall carry out Occupational health surveillance which be a part of HRA and include Biological Monitoring where practical and feasible, and the tests and investigations relevant to the exposure (e.g. for Dust a X-Ray chest; For Noise Audiometric; for Lead Exposure Blood Lead, For Welders Full Ophthalmologic Assessment; for Manganese Miners a complete Neurological Assessment by a Certified Neurologist, and Manganese (Mn) Estimation in Blood; For Inorganic Chromium- Fortnightly skin inspection of hands and forearms by a responsible person. Except routine tests all tests would be carried out in a Lab accredited by NABH. Records of Health Surveillance must be kept for 30 years, including the results of and the records of Physical examination and tests. The record of exposure due to materials like Asbestos, Hard Rock Mining, Silica, Gold, Kaolin, Aluminium, Iron, Manganese, Chromium, Lead, Uranium need to be handed over to the Mining Department of the State in case the life of the mine is less than 30 years. It would be obligatory for the State Mines Departments to make arrangements for the safe and secure storage of the records including X-Ray. Only conventional X-Ray will be accepted for record purposes and not the digital one). X-Ray must meet ILO criteria (17 x14 inches and of good quality).
- iv. The Proponent shall maintained a record of performance indicators for workers which includes (a) there should not be a significant decline in their Body Mass Index and it should stay between 18.5 -24.9, (b) the Final Chest X-Ray compared with the base line X-Ray should not show any capacities ,(c) At the end of their leaving job there should be no Diminution in their Lung Functions Forced Expiratory Volume in one second (FEV1), Forced Vital Capacity (FVC), and the ratio) unless they are smokers which has to be adjusted, and the effect of age, (d) their hearing should not be affected. As a proof an Audiogram (first and last need to be presented), (e) they should not have developed any Persistent Back Pain, Neck Pain, and the movement of their Hip, Knee and other joints should have normal range of movement, (f) they should not have suffered loss of any body part. The record of the same should be submitted to the Regional Office, MoEF&CC annually along with details of the relief and compensation paid to workers having above indications.
- v. The Project Proponent shall ensure that Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.
- vi. Project Proponent shall make provision for the housing for workers/labors or shall construct labor camps within/outside (company owned land) with necessary basic infrastructure/ facilities like fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche for kids etc. The housing may be provided in the form of temporary structures which can be removed after the completion of the project related infrastructure. The domestic waste water should be treated with STP in order to avoid contamination of underground water.
- vii. The activities proposed in Action plan prepared for addressing the issues raised during the Public Hearing shall be completed as per the budgetary provisions mentioned in the Action Plan and within the stipulated time frame. The Status

Report on implementation of Action Plan shall be submitted to the concerned Regional Office of the Ministry along with District Administration.

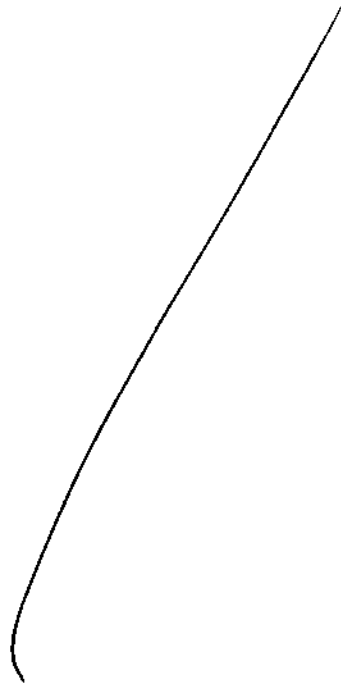
X. Corporate Environment Responsibility (CER)

- i. The activities and budget earmarked for Corporate Environmental Responsibility (CER) as per Ministry's O.M No 22-65/2017-IA. II (M) dated 01.05.2018 or as proposed by EAC should be kept in a separate bank account. The activities proposed for CER shall be implemented in a time bound manner and annual report of implementation of the same along with documentary proof viz. photographs, purchase documents, latitude & longitude of infrastructure developed & road constructed needs to be submitted to Regional Office MoEF&CC annually along with audited statement.
- ii. Project Proponent shall keep the funds earmarked for environmental protection measures in a separate account and refrain from diverting the same for other purposes. The Year wise expenditure of such funds should be reported to the MoEF&CC and its concerned Regional Office.

XI. Miscellaneous

- i. The Project Proponent shall prepare digital map (land use & land cover) of the entire lease area once in five years purpose of monitoring land use pattern and submit a report to concerned Regional Office of the MoEF&CC.
- ii. The Project Authorities should inform to the Regional Office regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.
- iii. It shall be mandatory for the project management to submit six (06) monthly compliance report in respect of the stipulated prior environmental clearance terms and conditions in hard copies and soft copies to the regulatory authority concerned Regional Office of MoEF& CC at Ranchi and Jharkhand State Pollution Control Board (J.S.P.C.B.), Ranchi / CPCB / SEIAA.
- iv. A separate 'Environmental Management Cell' with suitable qualified manpower should be set-up under the control of a Senior Executive. The Senior Executive shall directly report to Head of the Organization. Adequate number of qualified Environmental Scientists and Mining Engineers shall be appointed and submit a report to RO, MoEF&CC.
- v. The concerned Regional Office of the MoEF&CC shall randomly monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the MoEF&CC officer(s) by furnishing the requisite data / information / monitoring reports.
- vi. Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.
- vii. The Ministry / SEIAA / SEAC may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.

- viii. The Ministry / SEIAA / SEAC reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
- ix. The Environmental Clearance accorded shall be valid for the period of lease of the mine. The PP shall not increase production rate and alter lease area during the validity of Environmental Clearance
- x. Any appeal against this Environmental Clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under section 16 of the National Green Tribunal Act, 2010.



The TORs prescribed for undertaking detailed EIA study are as follows:

- i. Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.
- ii. A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.
- iii. All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.
- iv. All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/ toposheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).
- v. Information should be provided in Survey of India Toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.
- vi. Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.
- vii. It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.
- viii. Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.
- ix. The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.

- x. Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.
- xi. Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.
- xii. A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.
- xiii. Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.
- xiv. Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.
- xv. The vegetation in the RF / PF areas in the study area, with necessary details, should be given.
- xvi. A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.
- xvii. Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.
- xviii. A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and

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buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled- I fauna found in the study area, the necessary plan alongwith budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.

- xix. Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.
- xx. Similarly, for coastal Projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).
- xxi. R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.
- xxii. One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.
- xxiii. Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input

parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.

- xxiv. The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.
- xxv. Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.
- xxvi. Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.
- xxvii. Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.
- xxviii. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.
- xxix. Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.
- xxx. Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.
- xxxi. A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.
- xxxii. Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road

network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.

- xxxiii. Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.
- xxxiv. Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.
- xxxv. Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.
- xxxvi. Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.
- xxxvii. Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.
- xxxviii. Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.
- xxxix. Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.
- xl. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
- xli. The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.
- xl. A Disaster management Plan shall be prepared and included in the EIA/EMP Report.
- xl. Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.
- xliv. Besides the above, the below mentioned general points are also to be followed :-

- a) Executive Summary of the EIA/EMP Report
 - b) All documents to be properly referenced with index and continuous page numbering.
 - c) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.
 - d) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF & CC / NABL accredited laboratories. All the original analysis / testing reports should be available during appraisal of the Project.
 - e) Where the documents provided are in a language other than English, an English translation should be provided.
 - f) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.
 - g) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF& CC vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.
 - h) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF & CC with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.
 - i) As per the circular no. J-11011/618/2010-IA.II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.
 - j) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.
- xliv. After preparing the draft EIA (as per the generic structure prescribed in Appendix- III of the EIA Notification, 2006) covering the above mentioned issues, the proponent will get the public hearing conducted and take further necessary action for obtaining environmental clearance in accordance with the procedure prescribed under the EIA Notification, 2006.
- xlvi. The Prescribed ToRs is valid as per O.M. F. No. IA3-22/10/2022-IA.III[E177258], dated 08.06.2022 of MoEF&CC, Govt. of India.

The TORs prescribed for undertaking detailed EIA study are as follows:

A. Standard Conditions :

- I. Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.
- II. A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.
- III. All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.
- IV. All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/ toposheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).
- V. Information should be provided in Survey of India Toposheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.
- VI. Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority. Details on land proposed for mining activities are covered in Table 2.3.A & 2.3.B Para 2.7
- VII. It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/ violation of the environmental or forest norms/ conditions? The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the proposed safeguard measures in each case should also be provided.
- VIII. Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.

- IX. The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.
- X. Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.
- XI. Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.
- XII. A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.
- XIII. Status of forestry clearance for the broken-up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.
- XIV. Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.
- XV. The vegetation in the RF / PF areas in the study area, with necessary details, should be given.
- XVI. A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.
- XVII. Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.
- XVIII. A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled- I fauna found in the

study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.

- XIX. Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.
- XX. R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action program prepared and submitted accordingly, integrating the sectoral program of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.
- XXI. One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season); December-February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.
- XXII. Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.
- XXIII. The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.
- XXIV. Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided regulatory.
- XXV. Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.
- XXVI. Impact of the Project on the water quality, both surface and groundwater, should be assessed and necessary safeguard measures, if any required, should be provided.

- XXVII. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.
- XXVIII. Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.
- XXIX. Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.
- XXX. A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.
- XXXI. Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.
- XXXII. Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.
- XXXIII. Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.
- XXXIV. Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.
- XXXV. Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.
- XXXVI. Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as

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possible, quantitative dimensions may be given with time frames for implementation.

- XXXVII. Detailed environmental management plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.
- XXXVIII. Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.
- XXXIX. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
- XL. The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.
- XLI. A Disaster management Plan shall be prepared and included in the EIA/EMP Report.
- XLII. Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.

B. Additional Conditions :

- I. The Project Proponent should submit the revenue plan for mining lease, revenue plan should be superimposed on the satellite imaginary clearly demarcate the Govt. land, private land, agricultural land etc.
- II. The project proponent should submit the real – time aerial footage & video of the mining lease area and of the transportation route. PP should submit the detailed plan in tabular format (year-wise for life of mine) for afforestation and green belt development in and around the mining lease. The PP should submit the number of saplings to be planted, area to be covered under afforestation & green belt, location of plantation, target for survival rate and budget earmarked for the afforestation & green belt development in addition to this PP should show on a surface plan (5-year interval for life of mine) of suitable scale the area to be covered under afforestation & green belt clearly mentioning the latitude and longitude of the area to be covered during each 5 years. The capital and recurring expenditure to be incurred needs to be submitted. Presently in India there are many agencies which are developing forest in short interval of time. Thus, for the plantation activities details of the experts/agencies to be engaged needs to be provided with budgetary provisions.
- III. The project proponent should submit the quantity of surface of ground water to be used for this project. The complete water balance cycle need to be submitted. In addition to this project, project proponent should submit a detailed plan for rain water harvesting measures to be taken. The project proponent should submit the year wise target for reduction in consumption of the ground/ surface water by developing alternative source of water through rain water harvesting measures. The capital and recurring expenditure to be incurred needs to be submitted.

- IV. The project proponent should clearly bring out the details of the manpower to be engaged for this project with their roles/ responsibilities/ designations. In addition to this project proponent should mention the number and designation of person to be engaged for implementation of Environmental Management Plan (EMP). The capital and recurring expenditure to be incurred needs to be submitted.
- V. The Project proponent should submit the year-wise, activity and time bound budget earmarked for EMP, occupational health surveillance & Corporate Environmental Responsibility. The capital and recurring expenditure to be incurred needs to be submitted.
- VI. The project proponent should submit the measures/ technology to be adopted for prevention of illegal mining and pilferage of mineral. The project proponent should submit the detailed mineralogical and chemical composition of the mineral and percentage of free silica from NABL/ MoEF& CC accredited laboratory.
- VII. T
he project proponent should clearly show the transport route of the mineral and protection and mitigative measure to be adopted while transportation of the mineral. The impact from the center line of the road on either side should be clearly brought out supported with the line source modelling and isopleth. Further, frequency of testing of Poly Aromatic Hydrocarbon needs to be submitted along with budget. Based on the above study the compensation to be paid in the event of damage to the crop and land on the either side of the road needs to be mentioned. The project proponent should provide the source of equations used and complete calculations for computing the emission rate from the various sources.
- VIII. T
he project proponent should clearly bring out that what is the specific diesel consumption and steps to be taken for reduction of the same. Year-wise target for reduction in the specific diesel consumption needs to be submitted.
- IX. The project proponent should bring out the awareness campaign to be carried out on various environmental issues, practical training facility to be provided to the environmental engineer/ diploma holders, mining engineer/ diploma holders, geologists, and other trades related to mining operations. Target for the same needs to be submitted.
- X. The budget to be earmarked for the various activities shall be decided after perusal of the standard EC conditions published by the Ministry. After perusal of standard EC conditions if agreed project proponent should also submit an undertaking by the way of affidavit for compliance of standard EC conditions already prescribed by the Ministry and specific condition if prescribed by the EAC/ MoEF& CC.
- XI. The project proponent should ensure that only NABET accredited consultant shall be engaged for the preparation of EIA/ EMP Reports. The project proponent shall ensure that accreditation of consultant shall be valid during the collection of baseline data, preparation of EIA/ EMP report and during the appraisal process. The project proponent and consultant should submit an undertaking the information and data provided in the EIA Report and submitted to the Ministry are factually correct and project proponent and consultant are fully accountable for the same.

- XII. The project proponent should submit the photograph of monitoring stations & sampling locations. The photograph should bear the date, time, latitude & longitude of the monitoring station/ sampling location. In addition to this project proponent should submit the original test reports and certificates of the labs which will analyze the samples.

C. Other Conditions :

- I. All documents to be properly referenced with index and continuous page numbering.
- II. Where data are presented in the report especially in tablets, the period in which the data were collected and the sources should be indicated.
- III. The project proponent shall enclose all the analysis / testing reports of water, air, soil, noise etc. using the MoEF&CC / NABL accredited laboratories. All the original analysis / testing reports should be available during appraisal of the project.
- IV. Where the documents provided are in a language other than English, an English translation should be provided.
- V. The questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.
- VI. While preparing the EIA report, the instructions for the proponents and instructions for the consultants issued by MoEF vide O.M. No. J-11013/41/2006-IA.II(I) dated 4th Aug, 2009, which are available on the website of this Ministry, should be followed.
- VII. Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the ToR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the ToR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA / EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.
- VIII. As per the circular no. J-11011/618/2010-IA.II (I) dated 30.05.2012, certified report of the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.
- IX. The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) Sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.
- X. After preparing the draft EIA (as per the generic structure prescribed in Appendix- III of the EIA Notification, 2006) covering the above mentioned issues, the proponent will get the public hearing conducted and take further necessary action for obtaining environmental clearance in accordance with the procedure prescribed under the EIA Notification, 2006.
- XI. The Prescribed ToRs is valid as per O.M. F. No. IA3-22/10/2022-IA.III[E177258], dated 08.06.2022 of MoEF&CC, Govt. of India.